LOWER COLUMBIA – COWLITZ SPRING CHINOOK

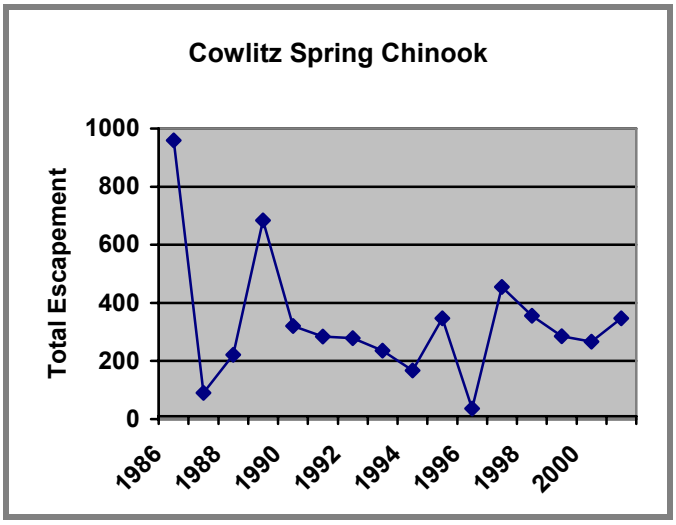
STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	TOTAL ESCAPEMENT
1986	959
1987	90
1988	221
1989	684
1990	320
1991	284
1992	279
1993	236
1994	167
1995	347
1996	36
1997	455
1998	356
1999	285
2000	266
2001	347



Data are total escapement estimates based on annual peak redd counts from the barrier dam just below the Cowlitz Salmon Hatchery (RM 50) downstream to the Kelso Bridge (RM 5).

Stock status is rated **Depressed** in 2002 because of **chronically low** escapements. Natural escapement levels (which include hatchery-origin fish) are typically only 200 to 400 fish.

STOCK DEFINITION

Cowlitz spring chinook were identified as stock based on their distinct spawning distribution and early spawning timing.

SPAWNING DISTRIBUTION: Historically all spawning occurred above the three dams on the mainstem Cowlitz in the area above Packwood and in the Cispus River between Iron and East Canyon creeks. Natural spawning now occurs primarily within an eight-mile stretch between the Cowlitz Trout Hatchery on Blue Creek and the Cowlitz Salmon Hatchery. Some adult fish are now transported to various sites above the dams as part of a restoration project.

SPAWNING TIMING: Spawning generally occurs from late August through early October.

LOWER COLUMBIA – COWLITZ SPRING CHINOOK

GENETIC ANALYSIS: No genetic analysis has been done on naturally spawning Cowlitz spring chinook. Allozyme analysis of the hatchery population sampled in 1982 and 1987 showed them to be genetically similar to, but distinct from, Kalama Hatchery and Lewis River wild spring chinook and distinct from all other Columbia River spring chinook stocks (WDF and WDW 1993).

STOCK ORIGIN

This is a **mixed** stock with **composite** production. The native component of the stock may be a mixture of spring chinook stocks present in the upper Cowlitz before the dams were built (Myers et al. 2002). The Cowlitz Salmon Hatchery was built to mitigate for the loss of spawning habitat above Mayfield Dam. Because run and spawning timing separation between spring and fall chinook at the hatchery is not complete, spring and fall chinook have been crossed (Myers et al. 2002). The majority of chinook are released at the hatchery; however, some subyearlings and yearlings are released above Mayfield Dam as part of a restoration project with the expectation that they will return to the upper watershed and spawn.

LOWER COLUMBIA – KALAMA SPRING CHINOOK

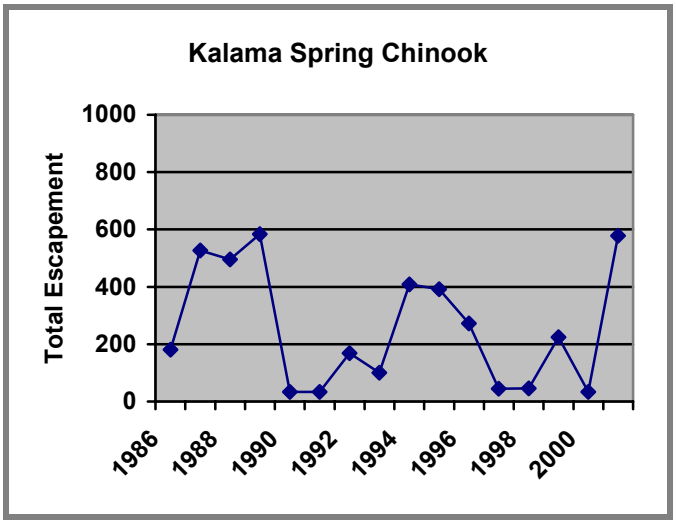
STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	TOTAL ESCAPEMENT
1986	181
1987	527
1988	496
1989	584
1990	34
1991	34
1992	168
1993	100
1994	408
1995	392
1996	272
1997	45
1998	46
1999	224
2000	34
2001	578



Data are total escapement estimates based on annual peak live plus dead spawner counts from lower Kalama Falls (RM 10.4) downstream to the sinkhole at RM 5.3.

Stock status is rated **Depressed** in 2002 because of **chronically low** escapements.

STOCK DEFINITION

Kalama spring chinook were identified as a stock based on their distinct spawning distribution, spawning timing, and genetic composition.

SPAWNING DISTRIBUTION: Most spawning occurs between the Fallert Creek Hatchery (RM 4.9) and lower Kalama Falls (RM 10.4). Since the completion of the Kalama Falls Hatchery (1959) at the lower falls, some spring chinook are now passed above the lower falls into the upper watershed. Most spawning in the upper watershed occurs from the Kalama Falls Hatchery to about RM 20, although some spawners go as far as upper Kalama Falls (RM 36.8)

SPAWNING TIMING: Spawning generally occurs from late August through early October.

GENETIC ANALYSIS: No analysis has been done on naturally spawning Kalama spring chinook. Allozyme analysis of Kalama Hatchery spring chinook sampled in 1990 showed that they are relatively similar to,

but genetically distinct from, Cowlitz Hatchery and Lewis spring chinook and are distinct from all other Columbia Basin spring chinook (Marshall et al. 1995)

Stock Origin

This is a **mixed** stock with **composite** production. The current stock is composed of fish that are surplus to the needs of hatchery production. Hatchery broodstock has been released into the Kalama from a variety of sources including Eagle Creek (Oregon), Willamette (Oregon), Cowlitz and Little White Salmon rivers, although the hatchery broodstock is still about 88% native (Myers et al. 2002), and genetic analysis has shown them to be distinct from Willamette and other lower Columbia spring chinook stocks.

LOWER COLUMBIA – LEWIS SPRING CHINOOK

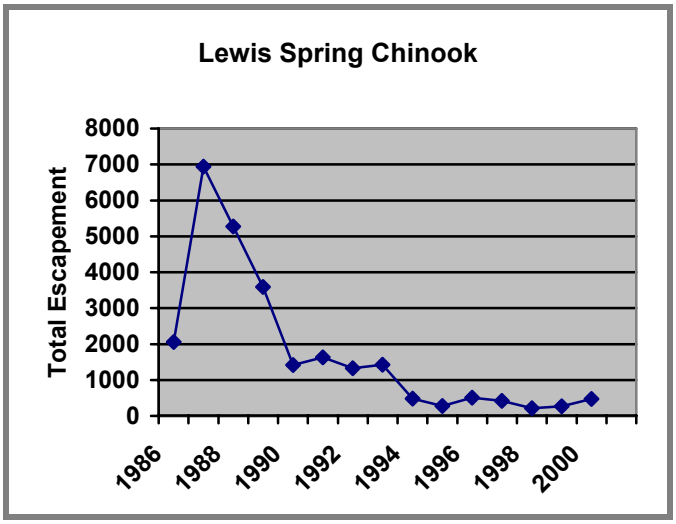
STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	TOTAL ESCAPEMENT
1986	2,055
1987	6,939
1988	5,277
1989	3,594
1990	1,419
1991	1,632
1992	1,328
1993	1,429
1994	478
1995	279
1996	504
1997	417
1998	213
1999	270
2000	439
2001	475



Data are total escapement estimates based on annual peak live plus dead spawner counts from Merwin Dam (RM19.6) downstream to the Lewis River Hatchery (RM15.7).

Stock status is rated Depressed in 2002 because of a **long-term negative trend** in escapements.

STOCK DEFINITION

Lewis spring chinook were identified as a stock based on their distinct spawning distribution and spawning timing.

SPAWNING DISTRIBUTION: Historically Lewis River spring chinook spawned throughout the upper watershed, but with the construction of Merwin Dam at RM 19, the majority of the spawning grounds became inaccessible. Today, natural spawning is limited to the four-mile stretch immediately below Merwin Dam. A few chinook have also been observed spawning in the East Fork Lewis River.

SPAWNING TIMING: Spawning generally occurs from late August through early October.

LOWER COLUMBIA – LEWIS SPRING CHINOOK

GENETIC ANALYSIS: Lewis spring chinook are genetically similar to, but distinct from, Kalama Hatchery and Cowlitz Hatchery spring chinook stocks and all other Columbia River spring chinook stocks (WDF and WDW 1993).

STOCK ORIGIN

This is a **mixed** stock with **composite** production. The native component of the stock may have been extirpated or largely replaced by introduced hatchery stocks (Myers 2002). The hatchery component has received more out-of -basin introductions than the Cowlitz or Kalama hatchery spring chinook broodstocks. The Lewis River Hatchery broodstock was originally taken from Cowlitz and Carson National Fish Hatchery stocks in the 1970s. Since then, this stock has been propagated largely from returns to the hatchery; however, eggs and adults have been brought in from Kalama and Willamette (Oregon) hatchery stocks. The present naturally spawning spring chinook population in the Lewis River is composed primarily of hatchery returns, and as a result, most naturally spawning chinook are likely hatchery strays.

LOWER COLUMBIA – WIND SPRING CHINOOK

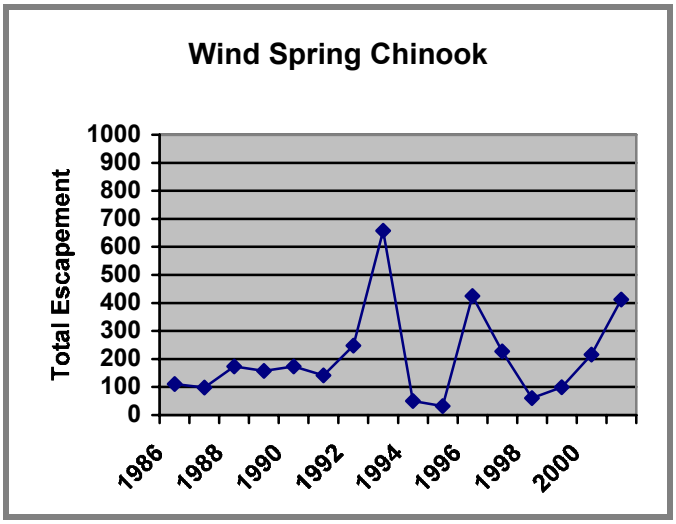
STOCK STATUS

1992 STATUS	2002 STATUS
Depressed	Healthy

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	TOTAL ESCAPEMENT
1986	111
1987	98
1988	173
1989	157
1990	173
1991	141
1992	248
1993	657
1994	50
1995	32
1996	425
1997	227
1998	60
1999	99
2000	216
2001	412



Data are total escapement estimates based on peak live plus dead spawner counts in index areas from the mouth of Paradise Creek (RM 25.1) downstream to Beaver Campground.

Stock status is rated **Healthy** in 2002 because there have been good escapements in six of the ten years since the last assessment. However, we believe that spawner abundance is a reflection of the date when Carson National Fish Hatchery gates are closed and spring chinook returning to the hatchery are no longer able to enter the hatchery, rather than a reflection of the population abundance trend.

STOCK DEFINITION

Wind River spring chinook were identified as a stock based on their distinct spawning distribution and early river entry timing (late March through June) and spawning timing.

SPAWNING DISTRIBUTION: Most spawning takes place in the mainstem Wind River above Shipherd Falls from about RM 15 upstream to the mouth of Paradise Creek.

SPAWNING TIMING: Spawning generally occurs from early August through mid-September.

LOWER COLUMBIA – WIND SPRING CHINOOK

GENETIC ANALYSIS: Allozyme analysis has shown that Wind River spring chinook from the Carson National Fish Hatchery resemble upper Columbia spring chinook stocks in the Wenatchee, Entiat and Methow basins (Marshall et al. 1995).

STOCK ORIGIN

This is a **non-native** stock with **composite** production. There is no native spring chinook stock in the Wind. Spring chinook in the Wind River are Carson hatchery fish that spawn naturally. The Carson stock is a mixture of spring chinook from the Snake River and the mid- and upper Columbia which were collected at Bonneville Dam in the 1970s for use as broodstock at the hatchery.

LOWER COLUMBIA – GRAYS FALL CHINOOK

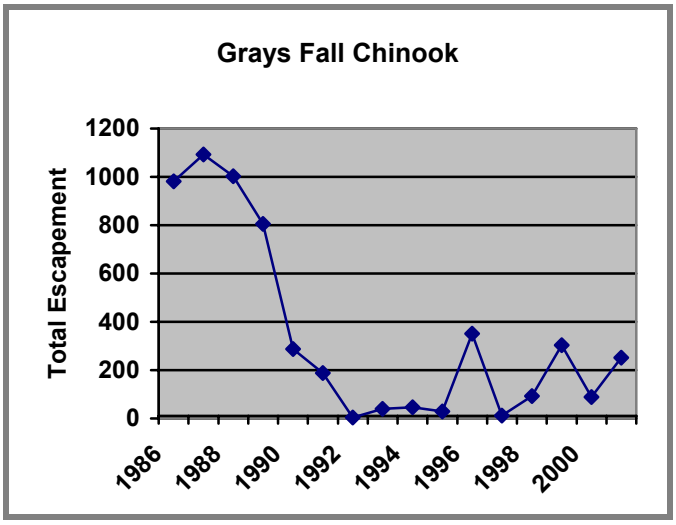
STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	TOTAL ESCAPEMENT
1986	981
1987	1,093
1988	1,003
1989	805
1990	287
1991	188
1992	4
1993	40
1994	47
1995	29
1996	351
1997	12
1998	93
1999	303
2000	89
2001	251



Data are total escapement estimates based on annual peak live plus dead spawner counts from the Grays River Hatchery (RM 1.4 on the West Fork Grays River) downstream to the Covered Bridge (RM 10.8), a distance of 3.6 miles.

Stock status is rated **Depressed** in 2002 because of a **long-term negative trend** and a **short-term severe decline** in escapements in 1997, 1998 and 2000. Generally, lower Columbia tule fall chinook stocks, including Grays fall chinook, experienced poor survival in the 1990s.

STOCK DEFINITION

Grays fall chinook were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Most spawning occurs from the covered bridge (RM 8.6) on the mainstem upstream to the Grays River Hatchery on the West Fork Grays River (RM 1.4).

SPAWNING TIMING: Spawning generally occurs from late September to mid-November.

GENETIC ANALYSIS: No genetic analysis has been done on Grays River fall chinook.

LOWER COLUMBIA – GRAYS FALL CHINOOK

Stock Origin

This is a **mixed** stock with **wild** production. A native population of fall chinook existed in the Grays River prior to the construction of Grays River Hatchery in 1960. Until recently, a significant portion of the fall chinook spawners in the Grays River were hatchery strays. The fall chinook program at the Grays River Hatchery ended in 1998. The present population is a probably mix of native and hatchery-origin fish with life history characteristics common to those of other lower Columbia River tule fall chinook stocks.

LOWER COLUMBIA – SKAMOKAWA CREEK FALL CHINOOK

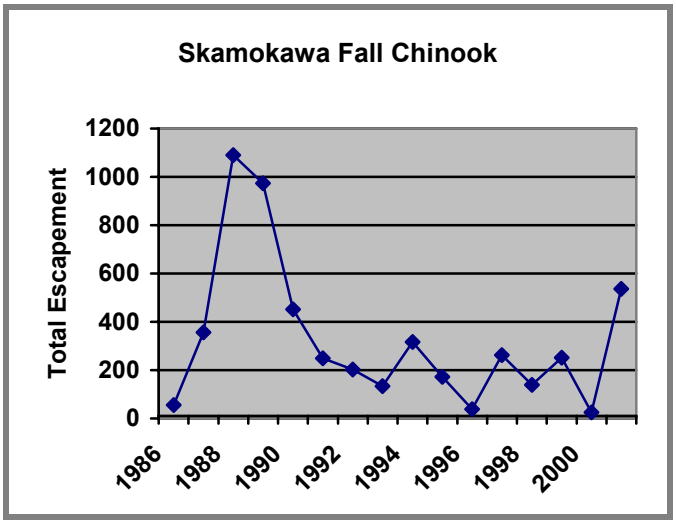
STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	TOTAL ESCAPEMENT
1986	756
1987	356
1988	1,090
1989	973
1990	451
1991	249
1992	202
1993	134
1994	316
1995	172
1996	39
1997	262
1998	139
1999	251
2000	25
2001	536



Data are total escapement estimates based on annual peak live plus dead spawner counts from the confluence of Standard and McDonald creeks (RM 6.6) downstream to Wilson Creek (RM 2.1).

Stock status is rated **Depressed** in 2002 because of **chronically low** escapements. Generally, tule fall chinook stocks, including Skamokawa fall chinook, experienced poor survival in the 1990s. We doubt that a native stock of fall chinook was present historically due to the small size of the watershed.

STOCK DEFINITION

Skamokawa fall chinook were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Most spawning takes place in a 4.5- mile stretch of water from Wilson Creek upstream to Standard and MacDonald creeks.

SPAWNING TIMING: Spawning generally occurs from late September to mid-November.

GENETIC ANALYSIS: No genetic analysis has been done on Skamokawa Creek fall chinook.

LOWER COLUMBIA – SKAMOKAWA CREEK FALL CHINOOK

Stock Origin

This is a **mixed** stock with **composite** production and is similar in life history to other tule fall chinook stocks in the lower Columbia. Currently a significant portion of the naturally spawning chinook are hatchery strays (Harlan 1999).

LOWER COLUMBIA – ELOCHOMAN FALL CHINOOK

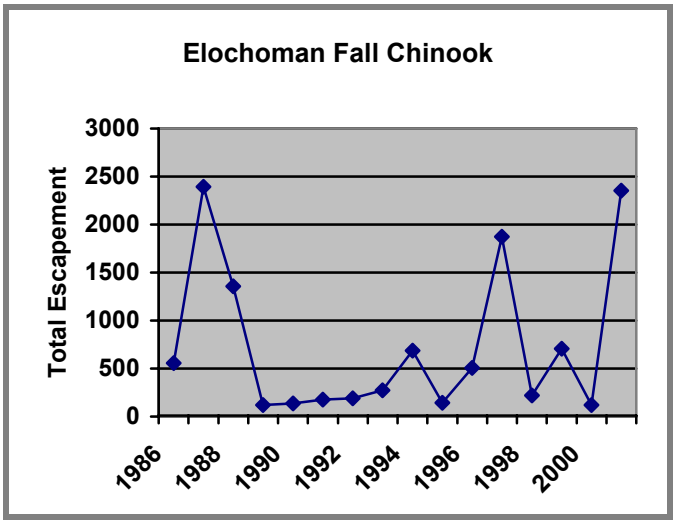
STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	Healthy

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	TOTAL ESCAPEMENT
1986	558
1987	2,392
1988	1,356
1989	120
1990	136
1991	178
1992	190
1993	274
1994	688
1995	144
1996	508
1997	1,875
1998	220
1999	707
2000	121
2001	2,354



Data are total escapement estimates based on annual peak live plus dead spawner counts from the Elochoman Hatchery (RM 9.4) downstream to the Foster Road bridge (RM 3.4).

Stock status is rated **Healthy** in 2002. Generally, tule fall chinook stocks, such as Elochoman fall chinook, experienced poor survival in the 1990s. Currently natural spawning abundance is a reflection of adult returns to the Elochoman Hatchery in excess of hatchery requirements.

STOCK DEFINITION

Elochoman fall chinook were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Most spawning takes place in the mainstem Elochoman between RM 4 and 9.

SPAWNING TIMING: Spawning generally occurs from late September to mid-November.

GENETIC ANALYSIS: Samples of Elochoman fall chinook spawners were taken in 1995 and 1997. Marked Rogue River (Oregon) chinook from net pen releases have been found in the Elochoman River, and 23 were included in the 1995 sample. When known Rogue River fish were removed from the sample, allozyme analysis showed that Elochoman chinook allele frequencies were similar to but distinct from

those of other Columbia River chinook. Some introgression with Rogue River fish may have occurred (Marshall et al. 1995).

Stock Origin

This is a **mixed** stock with **composite** production and is similar in life history to other tule fall chinook stocks in the lower Columbia. A native fall chinook population existed in the Elochoman prior to the construction of the Elochoman Hatchery in 1953. Since then most natural spawners have been excess hatchery fish passed above the hatchery rack. In 1997, 82% of naturally spawning chinook in the Elochoman were hatchery-origin fish (Harlan 1999).

LOWER COLUMBIA – MILL CREEK FALL CHINOOK

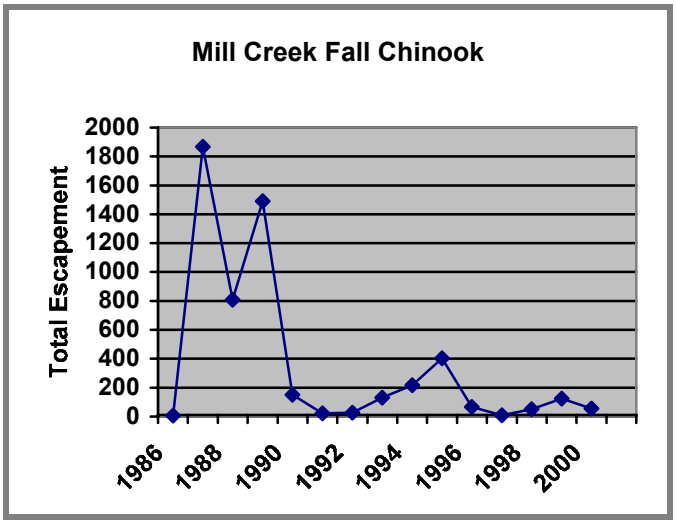
STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	TOTAL ESCAPEMENT
1986	7
1987	1,867
1988	808
1989	1,490
1990	150
1991	22
1992	27
1993	130
1994	218
1995	402
1996	67
1997	8
1998	50
1999	124
2000	56
2001	249



Data are total escapement estimates based on annual peak fish counts from the Mill Creek road bridge downstream to the mouth, a distance of two miles.

Stock status is rated **Depressed** in 2002 because of **chronically low** escapements. Generally, tule fall chinook stocks, such as Mill Creek fall chinook, experienced poor survival in the 1990s. However, natural spawning abundance is probably more a reflection of U.S. Fish and Wildlife Service Abernathy Creek Salmon Culture Technology Center stray rates rather than of natural production.

STOCK DEFINITION

Mill Creek fall chinook were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Most spawning takes place from the mouth of Mill Creek upstream to Mill Creek Bridge at RM 2.

SPAWNING TIMING: Spawning generally occurs from late September to mid-November.

GENETIC ANALYSIS: No genetic analysis has been done on Mill Creek fall chinook.

LOWER COLUMBIA – MILL CREEK FALL CHINOOK

Stock Origin

This is a **mixed** stock with **composite** production. Fall chinook that presently spawn in Mill Creek are a mixture of hatchery fish, and may include Abernathy Creek Salmon Culture Technology Center strays (Marshall 1995). Based on life history and timing, Mill Creek chinook resemble mid-Columbia tule fall chinook stocks such as White Salmon River and Wind tule fall chinook more closely than neighboring lower Columbia tule fall stocks (Marshall 1995).

LOWER COLUMBIA – ABERNATHY CREEK FALL CHINOOK

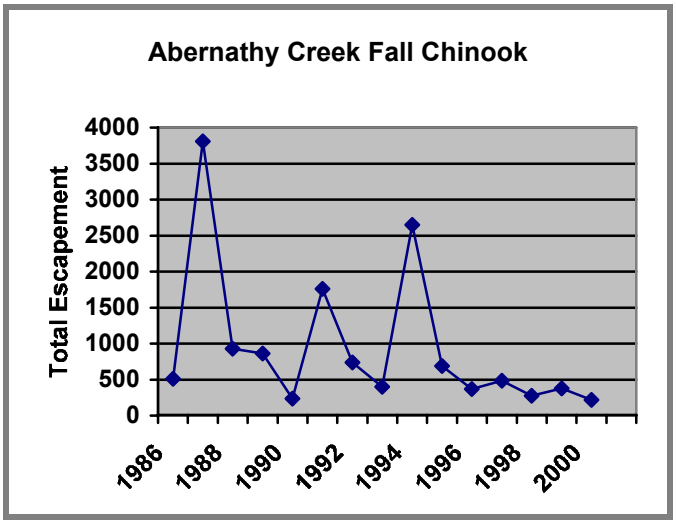
STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	Healthy

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	TOTAL ESCAPEMENT
1986	512
1987	3,807
1988	929
1989	861
1990	237
1991	1,758
1992	736
1993	398
1994	2,648
1995	689
1996	368
1997	484
1998	274
1999	376
2000	220
2001	1,617



Data are total escapement estimates based on annual peak live plus dead spawner counts from the U.S Fish and Wildlife Service Abernathy Creek Salmon Culture Technology Center downstream to the mouth of Abernathy Creek, a distance of three miles.

Stock status is rated **Healthy** in 2002 based on spawner abundance. However, natural spawning abundance is more a reflection of US Fish and Wildlife Service hatchery stray rates rather than of natural production. Abernathy Creek is not a typical chinook watershed, and we doubt that chinook populations are sustainable due to the lack of suitable spawning habitat.

STOCK DEFINITION

Abernathy Creek fall chinook were identified as a stock based on their distinct spawning distribution.

Spawning Distribution: Most spawning takes place from the creek mouth upstream to the Abernathy Creek Salmon Culture Technology Center at RM 3.

SPAWNING TIMING: Spawning generally occurs from late September to mid-November.

GENETIC ANALYSIS: Allozyme allele frequencies from Abernathy Creek chinook spawners sampled in 1995, 1997 and 1998 were significantly different from other Columbia River chinook, except Kalama hatchery

fall chinook (Myers et al. 2002). A sample of naturally produced smolts taken in 1995 was not similar to a sample of hatchery fish from the Abernathy Creek Salmon Culture Technology Center (Anne Marshall, WDFW, personal communication). This result may be due to genetic drift because Abernathy hatchery chinook have been found spawning in Abernathy Creek. The hatchery fish are derived largely from Spring Creek National Fish Hatchery chinook.

Stock Origin

This is probably a **mixed** stock with **composite** production. Abernathy Creek may not have supported a native fall chinook stock (Marshall et al. 1995). Fall chinook that presently spawn in Abernathy Creek are likely a mixture of hatchery-origin chinook (Marshall 1995). Based on life history and timing, Aberathy Creek chinook resemble mid-Columbia tule fall chinook stocks such as White Salmon River and Wind tule fall chinook more closely than neighboring lower Columbia tule fall stocks (Marshall 1995).

LOWER COLUMBIA – GERMANY CREEK FALL CHINOOK

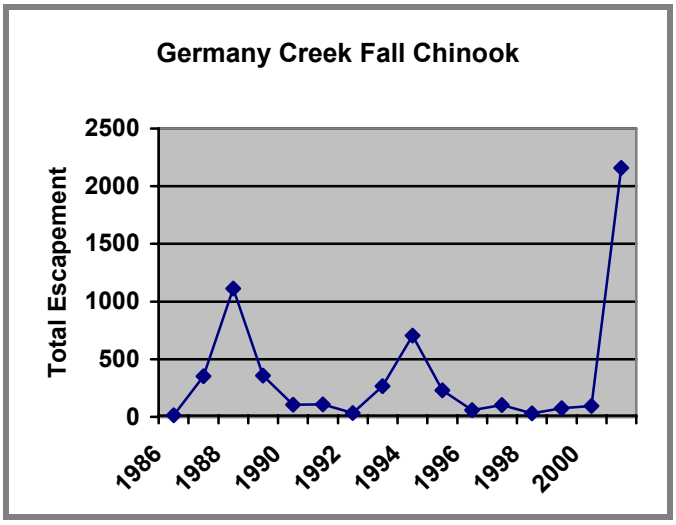
STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	TOTAL ESCAPEMENT
1986	15
1987	351
1988	1,113
1989	357
1990	106
1991	109
1992	33
1993	266
1994	706
1995	230
1996	59
1997	103
1998	31
1999	75
2000	94
2001	2,158



Data are total escapement estimates based on annual peak live plus dead spawner counts from RM 3.5 downstream to the mouth of Germany Creek.

Stock status is rated **Depressed** in 2002 because of **chronically low** escapements. Natural spawning abundance is more a reflection of the size of returns to nearby Abernathy Creek Salmon Culture Technology Center than of natural production. Germany Creek is not a typical chinook watershed, and we doubt that chinook populations are sustainable due to the lack of suitable spawning habitat.

STOCK DEFINITION

Germany Creek fall chinook were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Most spawning takes place from the creek mouth upstream to RM 3.5.

SPAWNING TIMING: Spawning generally occurs from late September to mid-November.

GENETIC ANALYSIS: No genetic analysis has been done on Germany Creek fall chinook.

LOWER COLUMBIA – GERMANY CREEK FALL CHINOOK

Stock Origin

This is a probably a **mixed** stock with **composite** production. Germany Creek may not have supported a native fall chinook stock (Marshall et al. 1995). Fall chinook that presently spawn in Germany Creek are probably a mixture of hatchery-origin fish. Based on life history and timing, Germany Creek chinook resemble mid-Columbia tule fall chinook stocks such as White Salmon River and Wind tule fall chinook more closely than neighboring lower Columbia tule fall stocks (Marshall 1995).

LOWER COLUMBIA – COWLITZ FALL CHINOOK

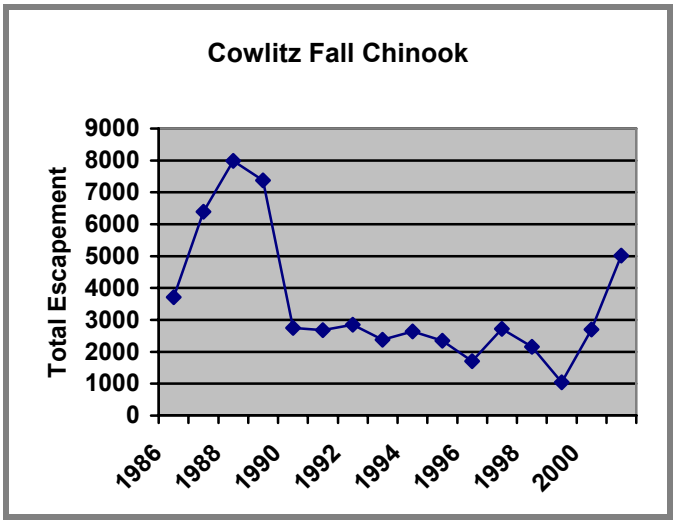
STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	TOTAL ESCAPEMENT
1986	3,711
1987	6,390
1988	7,990
1989	7,375
1990	2,750
1991	2,680
1992	2,849
1993	2,374
1994	2,634
1995	2,351
1996	1,707
1997	2,724
1998	2,160
1999	1,045
2000	2,700
2001	5,013



Data are total escapement estimates based on annual peak redd counts from the barrier dam at the Cowlitz Salmon Hatchery (~ RM 50) downstream to Kelso Bridge (RM 4.9).

Stock status is rated **Depressed** in 2002 because of **chronically low** escapements. Natural spawning abundance is more a reflection of the size of returns to the Cowlitz Salmon Hatchery and stray rates than of natural production. The natural spawning escapement goal is 3,000 adults. Until 2001 the goal had not been met since 1989.

STOCK DEFINITION

Cowlitz fall chinook were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Historically, the native run spawned throughout the watershed from the river mouth upriver into tributaries as far as Ohanapecosh and Tilton rivers. However, with the construction of Mayfield Dam (1962), spawning is now limited to mainstem waters below the dam.

SPAWNING TIMING: Spawning generally occurs from late September to mid-November.

GENETIC ANALYSIS: No genetic analysis has been done on naturally spawning Cowlitz fall chinook. Allozyme analysis of Cowlitz Hatchery fall chinook sampled in 1981, 1982 and 1988 showed that they

were similar to, but distinct from, Kalama hatchery fall chinook and distinct from all other Washington chinook examined (WDF and WDW 1993).

Stock Origin

This is a **mixed** stock with **composite** production and is similar in life history to other tule fall chinook stocks in the lower Columbia. Fall chinook are native to the Cowlitz watershed. Spawners are a mixture of native and hatchery-origin fish but are mostly strays from Cowlitz Salmon Hatchery (DeVore 1987). Historically hatchery broodstock have been mostly native Cowlitz fall chinook. However four non-native plants of juvenile chinook occurred between 1951 and 1981, including Toutle (1952 and 1968), Kalama (1971) and Big Creek, Kalama and Bonneville (1981).

LOWER COLUMBIA – COWEEMAN FALL CHINOOK

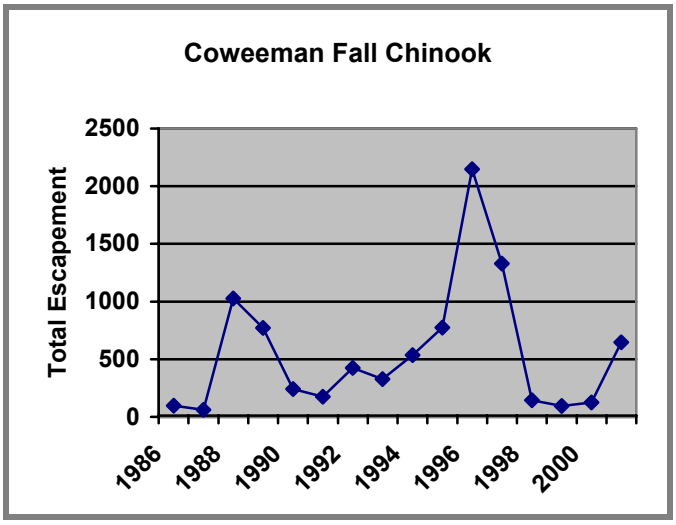
STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	TOTAL ESCAPEMENT
1986	97
1987	62
1988	1,027
1989	770
1990	241
1991	174
1992	424
1993	327
1994	535
1995	774
1996	2,148
1997	1,328
1998	144
1999	93
2000	126
2001	646



Data are total escapement estimates based on annual peak live plus dead spawner counts from the mouth of Mulholland Creek downstream to the Jeep Club Bridge (Libby Road Bridge), a distance of about six miles.

Stock status is rated **Depressed** in 2002 because of **chronically low escapements** and a **short-term severe decline** in 1998, 1999 and 2000. Most tule fall chinook stocks, such as Coweeman fall chinook, experienced poor survival in the 1990s. The escapement goal for the Coweeman is 1,000 adults. Generally this goal has not been met. Recently, six miles of index areas have been added to the database. Therefore, new data are not comparable to older data. For this review, the Coweeman was identified as Depressed as a result of the low escapement in recent years.

STOCK DEFINITION

Coweeman fall chinook were identified as a stock based on their distinct spawning distribution and genetic composition.

SPAWNING DISTRIBUTION: Most spawning occurs from the Jeep Club bridge upstream to Mulholland Creek.

SPAWNING TIMING: Spawning occurs from late September to mid-November.

LOWER COLUMBIA – COWEEMAN FALL CHINOOK

GENETIC ANALYSIS: Allozyme analysis of Coweeman fall chinook spawners sampled in 1996 and 1997 showed that they are significantly different from all other Columbia Basin chinook stocks examined, including lower Columbia River hatchery fall chinook such as Cowlitz (Myers et al. 2002).

STOCK ORIGIN

This is a **native** stock with **wild** production. In the 1992 SASSI, Coweeman fall chinook were characterized as being of mixed native and non-native origin with composite production based on a history of releases of Spring Creek, Washougal and Toutle hatchery chinook between 1951 and 1979. However, more recent analysis (Myers et al. 2002) indicates that Coweeman fall chinook are not especially similar to any existing lower Columbia River Hatchery chinook stock and are the most distinctive of the Washington lower Columbia tule fall chinook stocks.

LOWER COLUMBIA – GREEN RIVER (TOUTLE) FALL CHINOOK

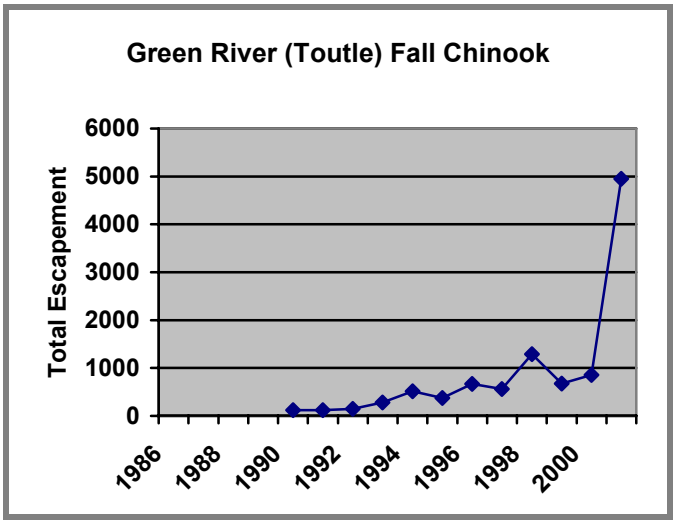
STOCK STATUS

1992 STATUS	2002 STATUS
Depressed	Healthy

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	TOTAL ESCAPEMENT
1986	No data
1987	No data
1988	No data
1989	No data
1990	123
1991	123
1992	150
1993	281
1994	516
1995	375
1996	667
1997	560
1998	1,287
1999	678
2000	852
2001	4,951



Data are total escapement estimates based on annual peak live plus dead spawner counts from the North Toutle Hatchery weir (on the Green River) to the mouth of the Green River, a distance of 0.6 miles.

Stock status is rated **Healthy** in 2002 based on adult abundance. Generally, tule fall chinook stocks, such as Green River fall chinook, experienced poor survival in the 1990s. With the stabilization of the watershed since the eruption of Mt. St. Helens, chinook are re-establishing themselves in the watershed. During the post-eruption years, no surveys were conducted. It is likely that the majority of naturally-spawning fish are of hatchery origin.

STOCK DEFINITION

Green River fall chinook were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Prior to the eruption of Mt. St. Helens, natural spawning occurred throughout the watershed, especially in the lower five miles of the Toutle as well as in the North Fork Toutle and Green rivers. Most spawning now occurs from the mouth of the Green River up to North Toutle Hatchery weir(on the Green River).

SPAWNING TIMING: Spawning generally occurs from late September to mid-November.

LOWER COLUMBIA – GREEN RIVER (TOUTLE) FALL CHINOOK

GENETIC ANALYSIS: Genetic analysis has not been done on Green River fall chinook.

STOCK ORIGIN

This is a **mixed** stock with **composite** production and is similar in life history to other tule fall chinook stocks in the lower Columbia. Fall chinook were historically native to the Toutle River and its tributaries. This watershed has received plants of non-native fall chinook from Wind River, Spring Creek, Big Creek (Oregon), Kalama and Washougal rivers. Since the eruption of Mt. St. Helens, hatchery fish have come from Grays River, Big Creek, Kalama and Washougal hatcheries. Currently, 2.5 million sub-yearlings are released annually into the Green River.

LOWER COLUMBIA – SOUTH FORK TOUTLE FALL CHINOOK

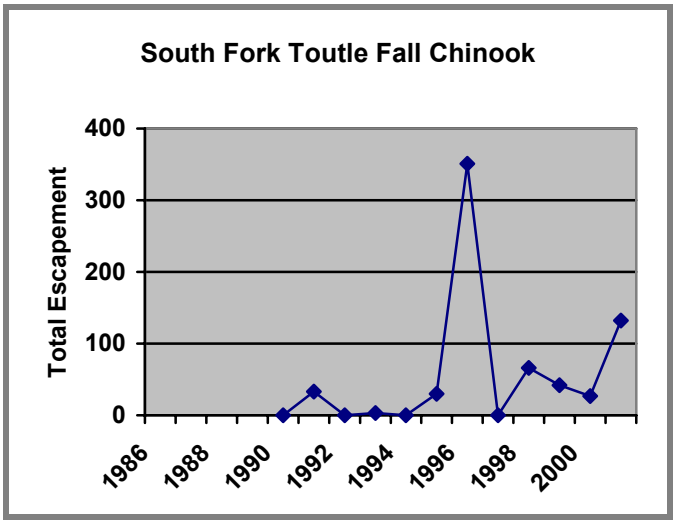
STOCK STATUS

1992 STATUS	2002 STATUS
Depressed	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	TOTAL ESCAPEMENT
1986	No data
1987	No data
1988	No data
1989	No data
1990	0
1991	33
1992	0
1993	3
1994	0
1995	30
1996	351
1997	0
1998	66
1999	42
2000	27
2001	132



Data are total escapement estimates based on annual peak live plus dead spawner counts from the 4700 Road Bridge (RM 7.1) downstream to the county road bridge (RM 1.4).

Stock status is rated **Depressed** in 2002 because of **chronically low** escapements. Generally, tule fall chinook stocks, such as South Fork Toutle fall chinook, experienced poor survival in the 1990s. With the stabilization of the watershed since the eruption of Mt. St. Helens in 1980, chinook are beginning to re-establish themselves in the watershed. No escapement objectives have been established. During the post-eruption years, no surveys were conducted. It is likely that the majority of naturally spawning fish are of hatchery origin, given the higher abundance levels in the Green River, where the hatchery is located.

STOCK DEFINITION

South Fork Toutle fall chinook were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Prior to the eruption, natural spawning occurred throughout the watershed, especially in the lower five miles of the Toutle as well as in the North Fork Toutle and Green rivers. The eruption destroyed spawning areas in the mainstem Toutle, the North Fork and Green rivers. Most spawning now takes place in the lower South Fork Toutle.

LOWER COLUMBIA – SOUTH FORK TOUTLE FALL CHINOOK

SPAWNING TIMING: Spawning generally occurs from late September to mid-November.

GENETIC ANALYSIS: Genetic analysis has not been done on South Fork Toutle fall chinook.

STOCK ORIGIN

This is a **mixed** stock with **composite** production and is similar in life history to other tule fall chinook stocks in the lower Columbia. Fall chinook were historically native to the Toutle River and its tributaries. This watershed has received plants of non-native fall chinook from Wind River, Spring Creek, Big Creek (Oregon), Kalama and Washougal rivers. Since the eruption of Mt. St. Helens, hatchery fish have come from Grays River, Big Creek, Kalama and Washougal hatcheries.

LOWER COLUMBIA – KALAMA FALL CHINOOK

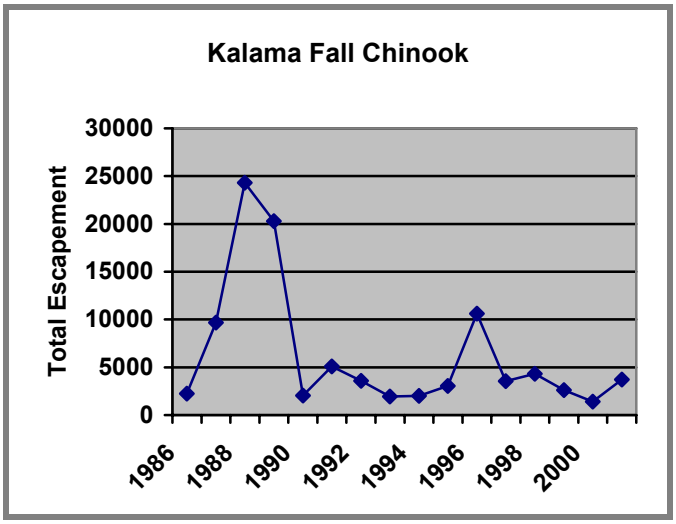
STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	Healthy

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	TOTAL ESCAPEMENT
1986	2,227
1987	9,682
1988	24,297
1989	20,413
1990	2,054
1991	5,085
1992	3,593
1993	1,941
1994	2,020
1995	3,044
1996	10,630
1997	3,539
1998	4,318
1999	2,617
2000	1,420
2001	3,714



Data are total escapement estimates based on annual peak live plus dead spawner counts from Italian Creek (RM 10) downstream to the I-5 bridge (RM 1.3), a distance of 8.7 miles.

Stock status is rated **Healthy** in 2002 because escapements have usuallyexceeded the escapement goal of 2,000 adults. Natural spawning abundance has exceeded 20,000 spawners, but escapement levels normally range from 2,000 to 4,000.

STOCK DEFINITION

Kalama fall chinook were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Most spawning takes place from the I-5 bridge upstream to Italian Bridge. Lower Kalama Falls (RM 10.5) is the natural limit to upstream migration. However, surplus hatchery fish are released above the falls.

SPAWNING TIMING: Spawning generally occurs from late September to mid-November.

GENETIC ANALYSIS: No genetic analysis has been done on naturally spawning Kalama fall chinook. Allozyme analysis of Kalama hatchery fall chinook sampled in 1988 and 1989 showed that they were

genetically distinct from most other lower Columbia tule fall chinook but not significantly different from Abernathy Creek fall chinook (Myers et al. 2002). This result may reflect genetic drift in these two populations, which are otherwise dissimilar (Marshall et al. 1995)

Stock Origin

This is a **mixed** stock with **composite** production and is similar in life history to other tule fall chinook stocks in the lower Columbia. Hatchery fish, largely from the Kalama basin, have been released into the watershed since Fallert Creek Hatchery was completed in 1895. In 1959, Kalama Falls Hatchery went into production. Broodstock for both facilities has been taken from a temporary rack near Modrow Bridge. There have been relatively few introductions of out-of-basin chinook into the hatchery programs (Myers et al. 2002). The present annual release goal is 3.5 million sub-yearling chinook. Surplus hatchery fall chinook are released above the falls. It is probable that a significant number of natural spawners are hatchery strays.

LOWER COLUMBIA – LEWIS FALL CHINOOK

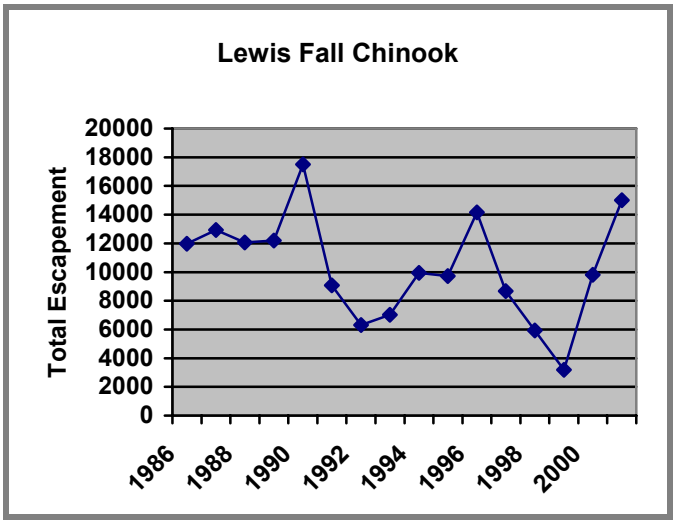
STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	Healthy

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	TOTAL ESCAPEMENT
1986	11,983
1987	12,935
1988	12,052
1989	12,199
1990	17,506
1991	9,066
1992	6,307
1993	7,025
1994	9,936
1995	9,715
1996	14,166
1997	8,670
1998	5,935
1999	3,184
2000	9,820
2001	15,000



Data are total escapement estimates based on annual peak live plus dead spawner counts from Merwin Dam (RM19.6) downstream to the Lewis River Hatchery (RM 15.7).

Stock status is rated **Healthy** in 2002 because escapements have exceeded the goal of 5,700 adults in every year since 1986 except 1999.

STOCK DEFINITION

Lewis fall chinook were identified as a stock based on their distinct spawning distribution, late spawning timing and appearance. This stock is a "bright" fall chinook stock.

SPAWNING DISTRIBUTION: Most spawning takes place from the Lewis River Hatchery upstream to Merwin Dam.

SPAWNING TIMING: Spawning generally occurs from October to January.

GENETIC ANALYSIS: Allozyme analysis of natural chinook spawners sampled in the North Fork Lewis in 1990 showed that they are genetically distinct from other Columbia Basin fall chinook except East Fork Lewis fall chinook and Washougal fall chinook (Marshall et al. 1995).

LOWER COLUMBIA – LEWIS FALL CHINOOK

Stock Origin

This is a **native** stock with **wild** production. There have been relatively few hatchery releases into the Lewis River. Annual releases occurred from 1971 to 1985 and consisted of about 50,000 to 150,000 fingerlings.

LOWER COLUMBIA – EAST FORK LEWIS FALL CHINOOK

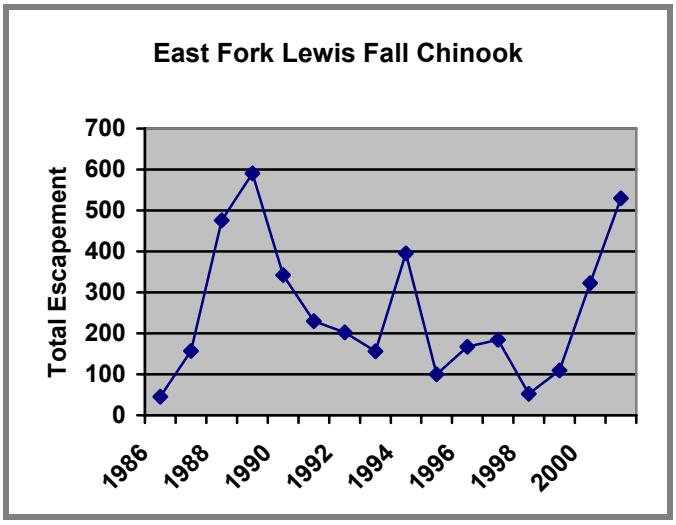
STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	TOTAL ESCAPEMENT
1986	445
1987	157
1988	476
1989	591
1990	342
1991	230
1992	202
1993	156
1994	395
1995	100
1996	167
1997	184
1998	52
1999	109
2000	323
2001	530



Data are total escapement estimates based on annual peak live plus dead spawner counts from the ramp at Lewisville County Park (RM 13) downstream to Daybreak Park, a distance of 4.2 miles.

Stock status is rated **Depressed** in 2002 because of a **long-term negative trend** in escapements. There has been a moderate increase in 2000 and 2001.

STOCK DEFINITION

East Fork Lewis fall chinook were identified as a stock based on their distinct spawning distribution and spawning timing. The stock has a tule fall chinook component and a "bright" fall chinook component.

SPAWNING DISTRIBUTION: Most spawning takes place in the four-mile stretch from Daybreak Park upstream to Lewisville.

SPAWNING TIMING: Two distinct spawning peaks are evident. Early fish spawn mainly in October, like tule fall chinook, while late fish generally spawn from November through January, like "bright" fall chinook.

GENETIC ANALYSIS: Allozyme analysis has shown that East Fork Lewis fall chinook are genetically distinct from most Lower Columbia chinook stocks examined but are most similar to Lewis fall chinook.

LOWER COLUMBIA – EAST FORK LEWIS FALL CHINOOK

Stock Origin

This is a **native** stock with **wild** production. Hatchery fish have never been released into the East Fork Lewis River.

LOWER COLUMBIA – WASHOUGAL FALL CHINOOK

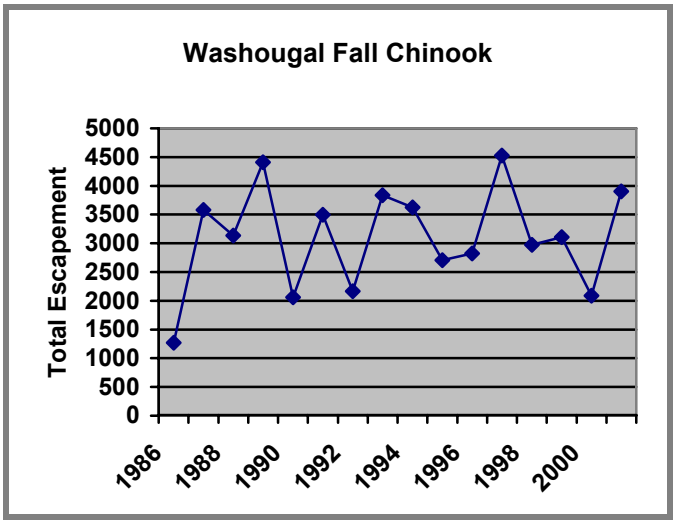
STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	Healthy

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	TOTAL ESCAPEMENT
1986	1,271
1987	3,578
1988	3,135
1989	4,408
1990	2,062
1991	3,494
1992	2,164
1993	3,836
1994	3,625
1995	2,707
1996	2,821
1997	4,529
1998	2,971
1999	3,105
2000	2,088
2001	3,901



Data are total escapement estimates based on annual peak live plus dead spawner counts from Washougal Hatchery (RM 19.7) downstream to Timber Trails and from Salmon Falls (RM 15.3) downstream to Ford's takeout on the mainstem Washougal.

Stock status is rated **Healthy** in 2002 because of high spawner abundance. Generally, tule fall chinook stocks experienced poor survival in the 1990s, but Washougal fall chinook escapements did not decline during this period. Given the large hatchery releases, it is likely that most natural spawners are hatchery strays.

STOCK DEFINITION

Washougal fall chinook were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Historically, natural spawning occurred up to Salmon Falls (RM 15), which was considered a migration barrier until a fishway was constructed in the 1950s. Most spawning now occurs downstream from Salmon Falls Bridge to the Fish and Wildlife Access, a distance of about four miles.

SPAWNING TIMING: Spawning generally occurs from late September to mid-November.

LOWER COLUMBIA – WASHOUGAL FALL CHINOOK

GENETIC ANALYSIS: Allozyme analysis of Washougal fall chinook spawners sampled in 1995 and 1996 showed that they are significantly different from other Columbia Basin chinook populations except for Lewis River "bright" fall chinook (Myers et al. 2002).

STOCK ORIGIN

This is a **mixed** stock with **composite** production and is similar to in life history other tule fall chinook stocks in the lower Columbia. Fall chinook are native to the Washougal River. Substantial numbers of hatchery fish have been released into this watershed from the Grays, Elochoman, Toutle, Kalama and Bonneville (Oregon) hatcheries. The present annual hatchery release goal is four million subyearlings.

LOWER COLUMBIA – BONNEVILLE BRIGHT FALL CHINOOK

This stock was not identified in the 1992 SASSI.

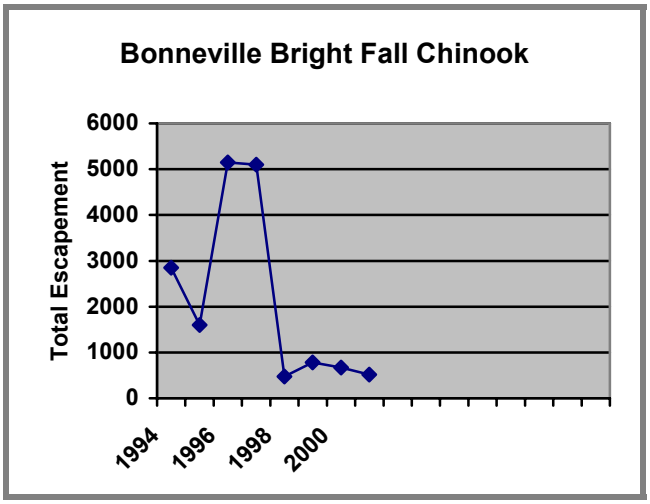
STOCK STATUS

1992 STATUS	2002 STATUS
Not Rated	Unknown

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: FAIR

YEAR	TOTAL ESCAPEMENT
1994	2,847
1995	1,603
1996	5,151
1997	5,100
1998	477
1999	781
2000	673
2001	515



Data are total escapement estimates based on redd counts from RM 141 to 143.5, including areas around Pierce and Ives islands, Hamilton Slough and the Washington shoreline between Duncan and Hamilton creeks.

Stock status is rated **Unknown** in 2002. WDFW biologists do not yet know what range of production to expect from the freshwater habitat used for spawning. Freshwater spawning habitat availability depends on the spill regime at Bonneville Dam.

STOCK DEFINITION

Bonneville fall chinook were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Spawning occurs in the mainstem Columbia River on both the Washington and Oregon sides of the river. In Washington, most spawning occurs from the upper end of Pierce Island to the lower end of Ives Island and along the Washington shore in Hamilton Slough and between the mouths of Duncan Creek and Hardy Creek.

SPAWNING TIMING: Spawning generally occurs from mid-October to late November.

LOWER COLUMBIA – BONNEVILLE BRIGHT FALL CHINOOK

GENETIC ANALYSIS: Allozyme analysis has shown that Bonneville fall chinook are genetically distinct from other Columbia River bright fall chinook stocks although they resemble up-river "bright" fall chinook maintained at the Little White Salmon National Fish Hatchery, Bonneville Hatchery (Oregon) and Yakima bright fall chinook (Marshall 1998).

STOCK ORIGIN

This is a stock of **unknown** origin with **wild** production. When the stock was discovered in 1994, WDFW staff speculated that it was composed of strays from the nearby Bonneville Hatchery. However, between 1994 and 1998, only six of the 2,246 carcasses sampled for coded-wire tags came from Bonneville Hatchery (WDFW and ODFW 1998). Genetic analysis indicates that the stock is distinct from up-river bright fall chinook and has not been significantly influenced by any other lower Columbia River chinook stocks, so origin remains unknown.

LOWER COLUMBIA – WIND TULE FALL CHINOOK

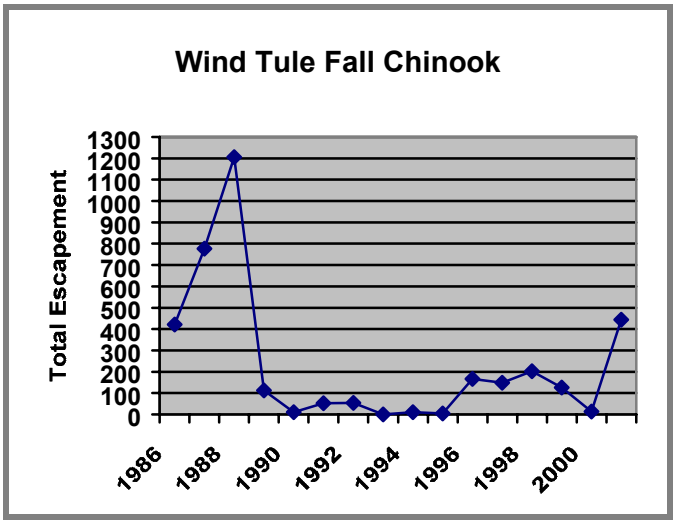
STOCK STATUS

1992 STATUS	2002 STATUS
Depressed	Critical

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	TOTAL ESCAPEMENT
1986	422
1987	776
1988	1,206
1989	112
1990	11
1991	52
1992	54
1993	0
1994	11
1995	4
1996	166
1997	148
1998	202
1999	126
2000	14
2001	444



Data are total escapement estimates based on peak live plus dead spawner counts from Shipherd Falls (RM 2.0) downstream to the confluence with the Columbia River.

Spawning abundance has not improved appreciably since the 1992 rating. Recent escapements have been higher, but very low escapements in from 1990 through 1995 may have reduced genetic diversity within the stock. Status is rated **Critical** in 2002 because of **chronically low** escapements.

STOCK DEFINITION

Wind tule fall chinook were identified as a stock based on their distinct spawning distribution, river entry timing (September) and spawning timing, appearance (darker skin color and paler flesh on entering freshwater than is seen in bright fall chinook), and age composition (four-year old spawners predominate).

SPAWNING DISTRIBUTION: Most spawning takes place in the lower two miles of the mainstem Wind River, below Shipherd Falls. A fish ladder was installed at the falls in 1956, and some spawning now takes place above the falls as far as Carson National Fish Hatchery (RM 18).

SPAWNING TIMING: Spawning generally occurs in September.

LOWER COLUMBIA – WIND TULE FALL CHINOOK

GENETIC ANALYSIS: No genetic analysis has been done on Wind tule fall chinook.

STOCK ORIGIN

This is a **mixed** stock with **composite** production. Tule fall chinook are native to the Wind River. Frequent egg transfers from the Spring Creek National Fish Hatchery to the Carson Hatchery have been made, and coded wire-tagged Spring Creek fall chinook have been observed in the Wind River. We believe that hybridization between native tule fall chinook and Spring Creek fall chinook has occurred.

LOWER COLUMBIA – WIND BRIGHT FALL CHINOOK

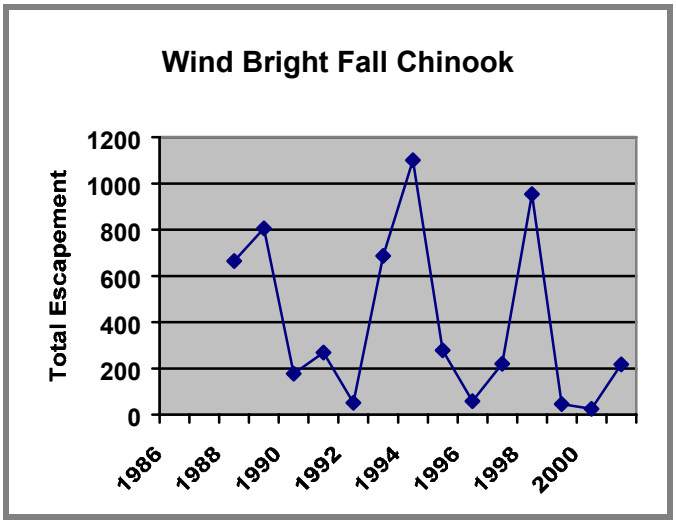
STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	Healthy

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Poor

YEAR	TOTAL ESCAPEMENT
1986	
1987	
1988	664
1989	806
1990	177
1991	269
1992	51
1993	686
1994	1,101
1995	278
1996	58
1997	220
1998	953
1999	46
2000	25
2001	217



Data are total escapement estimates based on peak live plus dead spawner counts from Shipherd Falls (RM 2.0) downstream to the confluence with the Columbia River.

Escapements have been variable but have not changed significantly since the 1992 assessment. For this reason stock status is rated **Healthy** in 2002.

STOCK DEFINITION

Wind bright fall chinook were identified as a stock based on their spawning distribution, river entry timing (October), spawning timing, appearance (chrome bright skin color and red flesh on freshwater entry characteristic of bright fall chinook), and age composition (five-year-old spawners predominate).

SPAWNING DISTRIBUTION: Most spawning takes place in the lower two miles of the mainstem Wind River below Shipherd Falls.

SPAWNING TIMING: Spawning generally occurs in October, later than the Wind tule fall chinook stock.

LOWER COLUMBIA – WIND BRIGHT FALL CHINOOK

GENETIC ANALYSIS: No genetic analysis has been done on Wind bright fall chinook

STOCK ORIGIN

This is a **non-native** stock of **unknown** origin, probably with composite production. Bright fall chinook are not native to the Wind River. Releases of hatchery-origin bright fall chinook into the Wind River have not been made. The stock probably originated from hatchery strays, most likely from the nearby Little White Salmon National Fish Hatchery because coded-wire tagged bright fall chinook from this facility have been recovered in the Wind River.

LOWER COLUMBIA – WHITE SALMON RIVER TULE FALL CHINOOK

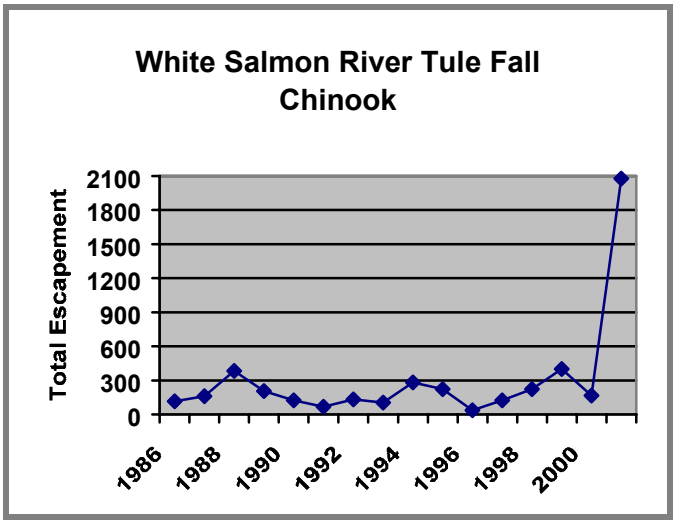
STOCK STATUS

1992 STATUS	2002 STATUS
Depressed	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Poor

YEAR	TOTAL ESCAPEMENT
1986	116
1987	161
1988	382
1989	205
1990	124
1991	67
1992	132
1993	105
1994	283
1995	222
1996	38
1997	124
1998	223
1999	401
2000	167
2001	2,077



Data are total escapement estimates based on peak live plus dead spawner counts from the Condit Dam powerhouse (RM 3.3) downstream to the confluence with the Columbia River. Data usefulness for rating stock status is poor because of poor visibility in the river during fall chinook surveys.

Although escapement increased in 2001, stock status is rated **Depressed** in 2002 due to **chronically low** escapements. Loss of historic spawning habitat above Condit Dam may contribute to poor stock performance.

STOCK DEFINITION

White Salmon River tule fall chinook were identified as a stock based on their distinct spawning distribution, spawning timing, appearance (dark color and pale flesh on freshwater entry characteristic of tule fall chinook) and age composition (four-year-old spawners predominate).

SPAWNING DISTRIBUTION: Spawning is confined to the lower three miles of mainstem White Salmon River below Condit Dam.

SPAWNING TIMING: Spawning generally occurs in October, earlier than in the White Salmon River bright fall chinook.

LOWER COLUMBIA – WHITE SALMON RIVER TULE FALL CHINOOK

GENETIC ANALYSIS: No genetic analysis has been done on White Salmon River tule fall chinook.

STOCK ORIGIN

This is a **mixed** stock with **composite** production. The White Salmon River tule fall chinook stock is represented both in wild spawners and in local hatchery programs. Tule fall chinook are native to the White Salmon River. They were used as broodstock to create the Spring Creek Hatchery tule fall chinook program in 1901. Spring Creek fish have been recovered in the White Salmon River.

LOWER COLUMBIA – WHITE SALMON RIVER BRIGHT FALL CHINOOK

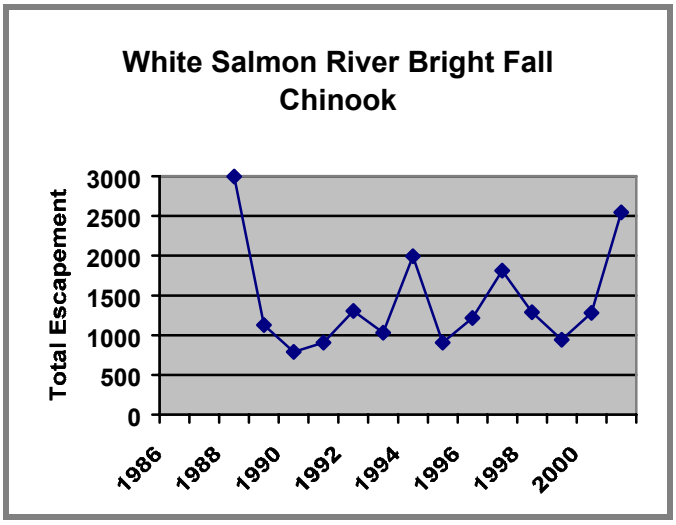
STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	Healthy

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Poor

YEAR	TOTAL ESCAPEMENT
1986	
1987	
1988	2,997
1989	1,127
1990	788
1991	906
1992	1,303
1993	1,032
1994	1,995
1995	905
1996	1,215
1997	1,813
1998	1,288
1999	941
2000	1,280
2001	2,543



Data are total escapement estimates based on live plus dead spawner counts from the Condit Dam powerhouse (RM 3.3) downstream to the confluence with the Columbia River. Data usefulness for rating stock status is poor because of poor visibility in the river during fall chinook surveys.

Except for the high value in 1988, escapements have been fairly stable. Stock status is rated **Healthy** in 2002.

STOCK DEFINITION

White Salmon River bright fall chinook were identified as a stock based on their distinct spawning distribution, spawning timing, appearance (chrome-bright color and red flesh on freshwater entry characteristic of bright fall chinook) and age composition (five-year old spawners predominate).

SPAWNING DISTRIBUTION: Spawning is confined to the lower three miles of the mainstem White Salmon River below Condit Dam.

SPAWNING TIMING: Spawning generally occurs in October, later than the White Salmon River tule fall chinook stock.

LOWER COLUMBIA – WHITE SALMON RIVER BRIGHT FALL CHINOOK

GENETIC ANALYSIS: No genetic samples have been taken from natural spawners with later fall spawning timing in the White Salmon River.

STOCK ORIGIN

This is a **non-native** stock with **composite** production. White Salmon River bright fall chinook appear to be derived from upriver bright fall chinook from the Little White Salmon National Fish Hatchery.

LOWER COLUMBIA – GRAYS FALL CHUM

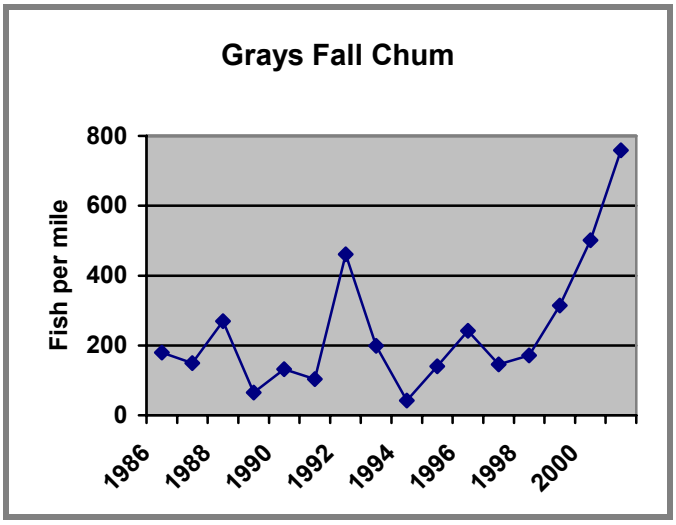
STOCK STATUS

1992 STATUS	2002 STATUS
Depressed	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Very Good

YEAR	PEAK FISH PER MILE
1986	180
1987	149
1988	269
1989	65
1990	132
1991	104
1992	461
1993	199
1994	42
1995	140
1996	242
1997	146
1998	171
1999	314
2000	501
2001	759



Data are peak live plus dead spawners per stream mile in the lower mainstem Grays (2.4 miles surveyed), the lower West Fork Grays (1.8 miles surveyed) and lower Crazy Johnson Creek (0.2 miles surveyed).

Stock status is rated **Depressed** in 2002 because of **chronically low** escapements.

STOCK DEFINITION

Grays fall chum were identified as a stock based on their distinct spawning distribution and genetic composition.

SPAWNING DISTRIBUTION: Most spawning takes place in the mainstem Grays River from the Covered Bridge (RM 10.8) to about 0.5 miles above the confluence with the West Fork (RM 12), in the West Fork Grays River from the mouth (RM 0.0) to about one-half mile above the WDFW Grays River Hatchery rack (RM 15), in lower Crazy Johnson Creek and in Gorley Creek. Floodwaters breached the Gorley Creek dike in December 1999 and washed out most of the spawning habitat in the creek.

SPAWNING TIMING: Spawning generally occurs from early November through December with the peak of spawning in mid- to late November.

LOWER COLUMBIA – GRAYS FALL CHUM

GENETIC ANALYSIS: Allozyme analysis has shown that Grays fall chum are genetically distinct from other Washington chum stocks examined (Phelps et al. 1995).

STOCK ORIGIN

This is a **native** stock with **composite** production. A hatchery supplementation program designed to increase numbers of naturally spawning Grays River fall chum began at the WDFW Grays River Hatchery in 1998.

LOWER COLUMBIA–BONNEVILLE FALL CHUM

This stock combines the Hardy Creek fall chum and Hamilton Creek fall chum stocks in the 1992 SASSI.

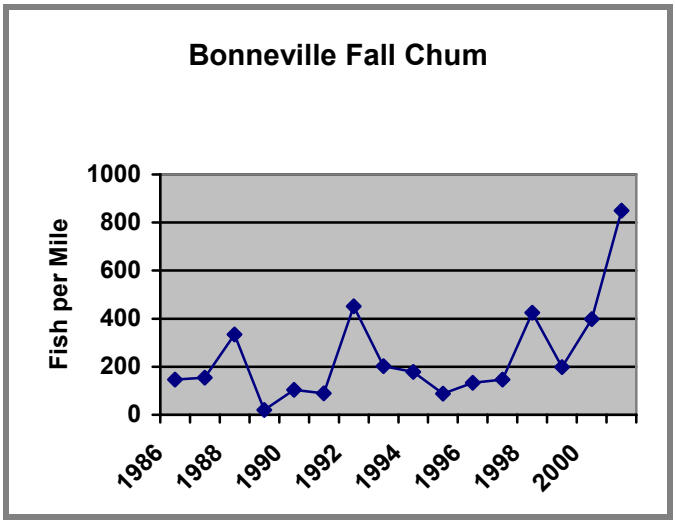
STOCK STATUS

1992 STATUS	2002 STATUS
Not rated	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	FISH PER MILE
1986	147
1987	155
1988	334
1989	20
1990	104
1991	95
1992	461
1993	199
1994	72
1995	128
1996	215
1997	146
1998	231
1999	291
2000	398
2001	849



Data are peak live plus dead spawners per stream mile in lower Hardy Creek (0.7 miles surveyed), mainstem Hamilton Creek (0.5 miles surveyed) and Hamilton Creek spring channel (0.2 miles surveyed).

Stock status is rated **Depressed** in 2002 because of **chronically low** escapements with the exception of 2001.

STOCK DEFINITION

In the 1992 SASSI two components of the Bonneville fall chum stock, Hardy Creek chum and Hamilton Creek chum, were treated as separate stocks. Genetic analysis performed since 1992 has shown that there is no significant difference between the two components or between them and chum spawning in the mainstem Columbia River below Bonneville Dam. Bonneville fall chum were identified as a stock based on their distinct spawning distribution and genetic composition.

SPAWNING DISTRIBUTION: Spawning takes place in the lower mile of Hardy and Hamilton creeks and in mainstem Columbia River side channels with springs near the I-205 highway bridge, at Ives Island and Pierce Island in the mainstem Columbia River and in Hamilton Slough and Spring Creek.

LOWER COLUMBIA–BONNEVILLE FALL CHUM

SPAWNING TIMING: Spawning generally occurs from late November through mid-January.

GENETIC ANALYSIS: Allozyme and DNA analyses have shown that Bonneville fall chum are genetically distinct from all other Washington chum stocks examined (LeClair 1997, 1999).

STOCK ORIGIN

This is a **native** stock with **composite** production. The U.S. Fish and Wildlife Service maintains an artificial spawning channel in Hardy Creek which is intended to provide increased spawning habitat for fall chum.

LOWER COLUMBIA – GRAYS COHO

Stock Status

1992 Status	2002 Status
Depressed	**Unknown**

Stock Status Rating Data

There are no adequate abundance trend data for Grays coho, so their status is **Unknown** in 2002.

Stock Definition

Grays coho were identified as a stock based on their distinct spawning distribution.

Spawning Distribution: Spawning takes place throughout the mainstem Grays River and the lower reaches of the East, West and South Fork Grays rivers.

Spawning Timing: Spawning generally occurs from October to January.

Genetic Analysis: Allozyme analysis of Gray River hatchery coho has shown them to be genetically distinct from all other Washington coho stocks examined (David Teel, NMFS, personal communication).

Stock Origin

This is a **mixed** stock with **composite** production. Native populations of coho were present in all lower Columbia River tributaries historically. Under the Columbia River Development program in the 1950s, salmon hatchery construction was expanded on the lower Columbia River tributaries, and hatcheries began to trap brood stock in many areas. Broodstock, eggs or juvenile coho have been transferred throughout the lower Columbia River stations and areas above Bonneville Dam. Hatchery off-station planting of juvenile coho was commonplace throughout lower Columbia tributaries. The result is a widely mixed coho stock. The Grays River Hatchery was built in 1960 on the West Fork Grays River. Hatchery coho fry and fingerlings have been planted in the sub-basin since at least 1965.

LOWER COLUMBIA – SKAMOKAWA CREEK COHO

Stock Status

1992 Status	2002 Status
Depressed	**Unknown**

Stock Status Rating Data

There are no adequate abundance trend data for Skamokawa coho, so their status is **Unknown** in 2002.

Stock Definition

Skamokawa coho were identified as a stock based on their distinct spawning distribution.

Spawning Distribution: Most spawning takes place in Skamokawa, Wilson, Left Fork Skamokawa, Quartz, and McDonald creeks. Spawning also occurs in Bell Canyon, Pollard, and Standard creeks.

Spawning Timing: Spawning occurs from September to February.

Genetic Analysis: No genetic analysis has been done on Skamokawa coho.

Stock Origin

This is a **mixed** stock with **composite** production. Native populations of coho were present in all lower Columbia River tributaries historically. Under the Columbia River Development program in the 1950s, salmon hatchery construction was expanded on the lower Columbia River tributaries, and hatcheries began to trap brood stock in many areas. Broodstock, eggs or juvenile coho have been transferred throughout the lower Columbia River stations and areas above Bonneville Dam. Hatchery off-station planting of juvenile coho was commonplace throughout lower Columbia tributaries. The result is a widely mixed coho stock.

LOWER COLUMBIA – ELOCHOMAN COHO

Stock Status

1992 Status	2002 Status
Depressed	**Unknown**

Stock Status Rating Data

There are no adequate abundance trend data for Elochoman coho, so their status is **Unknown** in 2002.

Stock Definition

Elochoman coho were identified as a stock based on their distinct spawning distribution.

Spawning Distribution: Most spawning takes place in the mainstem Elochoman River and in tributaries such as Beaver, Duck, Clear, Rock, and Otter creeks.

Spawning Timing: Spawning generally occurs from mid-October through March.

Genetic Analysis: No genetic analysis has been done on Elochoman coho.

Stock Origin

This is a **mixed** stock with **composite** production. Native populations of coho were present in all lower Columbia River tributaries historically. Under the Columbia River Development program in the 1950s, salmon hatchery construction was expanded on the lower Columbia River tributaries, and hatcheries began to trap brood stock in many areas. Broodstock, eggs or juvenile coho have been transferred throughout the lower Columbia River stations and areas above Bonneville Dam. Hatchery off-station planting of juvenile coho was commonplace throughout lower Columbia tributaries. The result is a widely mixed coho stock. A hatchery was built on the Elochoman River in 1953, and subsequent harvest management for hatchery production in the region has been a significant factor affecting natural production. Hatchery coho have been planted in the sub-basin since at least 1965. Broodstock is collected from hatchery rack returns. Elochoman River natural spawners are hybrids between native coho and non-native hatchery coho. Mixing of stocks very likely began to occur with the first releases.

LOWER COLUMBIA – MILL CREEK COHO

Stock Status

1992 Status	2002 Status
Depressed	**Unknown**

Stock Status Rating Data

There are no adequate abundance trend data for Mill Creek coho, so their status is **Unknown** in 2002.

Stock Definition

Mill Creek coho were identified as a stock based on their distinct spawning distribution.

Spawning Distribution: Spawning takes place in Mill Creek.

Spawning Timing: Spawning generally occurs from October through February.

Genetic Analysis: No genetic analysis has been done on Mill Creek coho.

Stock Origin

This is a **mixed** stock with **composite** production. Native populations of coho were present in all lower Columbia River tributaries historically. Under the Columbia River Development program in the 1950s, salmon hatchery construction was expanded on the lower Columbia River tributaries and hatcheries began to trap brood stock in many areas. Broodstock, eggs or juvenile coho have been transferred throughout the lower Columbia River stations and areas above Bonneville Dam. Hatchery off-station planting of juvenile coho was commonplace throughout lower Columbia tributaries. The result is a widely mixed coho stock.

LOWER COLUMBIA – ABERNATHY CREEK COHO

Stock Status

1992 Status	2002 Status
Depressed	**Unknown**

Stock Status Rating Data

There are no adequate abundance trend data for Abernathy Creek coho, so their status is **Unknown** in 2002.

Stock Definition

Abernathy Creek coho were identified as a stock based on their distinct spawning distribution.

Spawning Distribution: Spawning takes place in Abernathy Creek.

Spawning Timing: Spawning generally occurs from October through February.

Genetic Analysis: No genetic analysis has been done on Abernathy Creek coho.

Stock Origin

This is a **mixed** stock with **composite** production. Native populations of coho were present in all lower Columbia River tributaries historically. Under the Columbia River Development program in the 1950s, salmon hatchery construction was expanded on the lower Columbia River tributaries and hatcheries began to trap brood stock in many areas. Broodstock, eggs or juvenile coho have been transferred throughout the lower Columbia River stations and areas above Bonneville Dam. Hatchery off-station planting of juvenile coho was commonplace throughout lower Columbia tributaries. The result is a widely mixed coho stock.

LOWER COLUMBIA – GERMANY CREEK COHO

Stock Status

1992 Status	2002 Status
Depressed	**Unknown**

Stock Status Rating Data

There are no adequate abundance trend data for Germany Creek coho, so their stock status is **Unknown** in 2002.

Stock Definition

Germany Creek coho were identified as a stock based on their distinct spawning distribution.

Spawning Distribution: Spawning takes place in Germany Creek.

Spawning Timing: Spawning generally occurs from October through February.

Genetic Analysis: No genetic analysis has been done on Germany Creek coho.

Stock Origin

This is a **mixed** stock with **composite** production. Native populations of coho were present in all lower Columbia River tributaries historically. Under the Columbia River Development program in the 1950s, salmon hatchery construction was expanded on the lower Columbia River tributaries and hatcheries began to trap brood stock in many areas. Broodstock, eggs or juvenile coho have been transferred throughout the lower Columbia River stations and areas above Bonneville Dam. Hatchery off-station planting of juvenile coho was commonplace throughout lower Columbia tributaries. The result is a widely mixed coho stock.

LOWER COLUMBIA – COWLITZ COHO

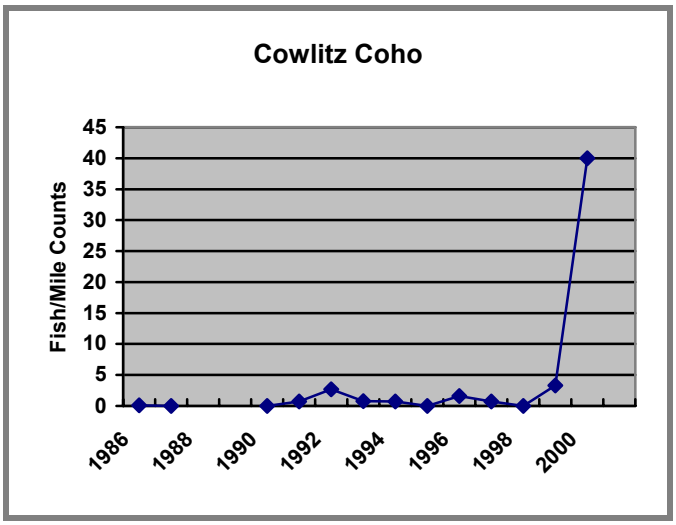
STOCK STATUS

1992 STATUS	2002 STATUS
Depressed	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Fair

YEAR	FISH/MILE COUNTS
1986	0.1
1987	0.0
1988	No data
1989	No data
1990	0.0
1991	0.7
1992	2.7
1993	0.8
1994	0.7
1995	0.0
1996	1.6
1997	0.7
1998	0.0
1999	3.3
2000	40.0
2001	No data



Data are peak fish/mile values based on live plus dead fish counts and redd counts. Fish are counted in Olequa, North Fork and South Fork Olequa creeks in the lower Cowlitz drainage.

Data collected from 1986 to the present demonstrate **chronically low** cumulative fish/mile values, thus stock status is rated **Depressed** in 2002.

A program to annually transport adult Cowlitz Salmon Hatchery stock above Cowlitz Falls Dam was initiated in the early 1990s. Increasing numbers of out-migrating smolts produced from a mix of natural production and juvenile out-planting has been observed each year at the Cowlitz Falls smolt trap. Trap efficiency has typically been in the 50 to 60 percent range, so the numbers observed represent approximately half of the total annual smolt production from the basin upstream of this point. Because there are no data yet on the number of successful adult recruits being generated by the observed smolt production, and because the recovery program for the watershed is still evolving, this information was not used in the current stock rating for Cowlitz natural coho production. Eventually separating lower river and upper river coho into separate stocks may be warranted, given the geographical isolation between the upper and lower rivers because of the dams.

LOWER COLUMBIA – COWLITZ COHO

Stock Definition

Cowlitz coho were identified as a stock based on their distinct spawning distribution, run timing and genetic composition. They are a Type N stock characterized by late run timing and by turning north in the ocean after leaving the Columbia River.

Late coho (Type N) are informally considered synonymous with Cowlitz River stock coho. Columbia River late stock hatchery programs were developed utilizing the Cowlitz River stock, their derivatives or native late runs.

Spawning Distribution: Most spawning below Mayfield Dam takes place in the mainstem Cowlitz River and in Lacamas, Brights, Ostrander, Blue, Otter, Mill, Arkansas, Foster, Stillwater, Campbell, Hill and Salmon creeks.

Spawning Timing: Spawning generally occurs from late October through January.

Genetic Analysis: Allozyme analysis of Cowlitz hatchery coho has shown them to be genetically distinct from other Washington coho stocks examined (David Teel, NMFS, personal communication).

Stock Origin

This is a **mixed** stock with **composite** production. Hatchery coho have been planted in the sub-basin since at least 1915 when the Tilton River Hatchery operated downstream of Morton until 1921. Most coho in the Cowlitz River sub-basin are of hatchery origin. Devore (1987) accounted for the 1982 brood hatchery release and concluded wild/natural production was minor. Currently broodstock is collected via hatchery rack returns. Mixing of stocks very likely began to occur as far back as 1915, with the first releases.

LOWER COLUMBIA – COWEEMAN COHO

Stock Status

1992 Status	2002 Status
Depressed	**Unknown**

Stock Status Rating Data

There are no adequate abundance trend data for Coweeman coho, so their status is **Unknown** in 2002.

Stock Definition

Coweeman coho were identified as a stock based on their distinct spawning distribution.

Spawning Distribution: Most spawning takes place in the mainstem Coweeman River and in tributaries such as Goble, Baird and Mulholland creeks.

Spawning Timing: Spawning generally occurs from late October through February.

Genetic Analysis: No genetic analysis has been done on Coweeman coho.

Stock Origin

This is a **mixed** stock with **composite** production. Native populations of coho were present in all lower Columbia River tributaries historically. Under the Columbia River Development program in the 1950s, salmon hatchery construction was expanded on the lower Columbia River tributaries and hatcheries began to trap brood stock in many areas. Broodstock, eggs or juvenile coho have been transferred throughout the lower Columbia River stations and areas above Bonneville Dam. Hatchery off-station planting of juvenile coho was commonplace throughout lower Columbia tributaries. The result is a widely mixed coho stock.

LOWER COLUMBIA – TOUTLE COHO

Stock Status

1992 Status	2002 Status
Depressed	**Unknown**

Stock Status Rating Data

There are no adequate abundance trend data for Toutle coho, so their status is **Unknown** in 2002. Coho returns to the Toutle River are presently rebuilding after the 1980 eruption of Mt. St. Helens.

Stock Definition

Toutle coho were identified as a stock based on their distinct spawning distribution.

Spawning Distribution: Most spawning takes place in the mainstem Toutle and lower North Fork Toutle rivers. Spawning also occurs in tributaries such as Stankey and Outlet creeks.

Spawning Timing: Spawning generally occurs from late October through February.

Genetic Analysis: No genetic analysis has been done on Toutle coho.

Stock Origin

This is a **mixed** stock with **composite** production. Native populations of coho were present in all lower Columbia River tributaries historically. Under the Columbia River Development program in the 1950s, salmon hatchery construction was expanded on the lower Columbia River tributaries and hatcheries began to trap brood stock in many areas. Broodstock, eggs or juvenile coho have been transferred throughout the lower Columbia River stations and areas above Bonneville Dam. Hatchery off-station planting of juvenile coho was commonplace throughout lower Columbia tributaries. The result is a widely mixed coho stock. The watershed has been seeded with hatchery fingerlings since 1983.

LOWER COLUMBIA – GREEN RIVER (TOUTLE) COHO

Stock Status

1992 Status	2002 Status
Depressed	**Unknown**

Stock Status Rating Data

There are no adequate abundance trend data for Green River coho, so their status is **Unknown** in 2002.

Stock Definition

Green River coho were identified as a stock based on their distinct spawning distribution.

Spawning Distribution: Most spawning takes place in the Green River and in tributaries such as Devils, Elk and Schultz creeks.

Spawning Timing: Spawning generally occurs from late October through February.

Genetic Analysis: No genetic analysis has been done on Green River coho.

Stock Origin

This is a **mixed** stock with **composite** production. Native populations of coho were present in all lower Columbia River tributaries historically. Under the Columbia River Development program in the 1950s, salmon hatchery construction was expanded on the lower Columbia River tributaries and hatcheries began to trap brood stock in many areas. Broodstock, eggs or juvenile coho have been transferred throughout the lower Columbia River stations and areas above Bonneville Dam. Hatchery off-station planting of juvenile coho was commonplace throughout lower Columbia tributaries. The result is a widely mixed coho stock.

LOWER COLUMBIA – SOUTH FORK TOUTLE COHO

Stock Status

1992 Status	2002 Status
Depressed	**Unknown**

Stock Status Rating Data

There are no adequate abundance trend data for South Fork Toutle coho, so their status is **Unknown** in 2002.

Stock Definition

South Fork Toutle coho were identified as a stock based on their distinct spawning distribution.

Spawning Distribution: Most spawning takes place in the South Fork Toutle River and in tributaries such as Johnson, Studebaker, Disappointment and Herrington creeks.

Spawning Timing: Spawning generally occurs from late October through February.

Genetic Analysis: No genetic analysis has been done on South Fork Toutle coho.

Stock Origin

This is a **mixed** stock with **composite** production. Native populations of coho were present in all lower Columbia River tributaries historically. Under the Columbia River Development program in the 1950s, salmon hatchery construction was expanded on the lower Columbia River tributaries and hatcheries began to trap brood stock in many areas. Broodstock, eggs or juvenile coho have been transferred throughout the lower Columbia River stations and areas above Bonneville Dam. Coho returns to the Toutle River are presently rebuilding after the 1980 volcanic eruption. Hatchery off-station planting of juvenile coho was commonplace throughout lower Columbia tributaries. The result is a widely mixed coho stock.

LOWER COLUMBIA – KALAMA COHO

Stock Status

1992 Status	2002 Status
Depressed	**Unknown**

Stock Status Rating Data

There are no adequate abundance trend data for Kalama coho, so their status is **Unknown** in 2002.

Stock Definition

Kalama coho were identified as a stock based on their distinct spawning distribution.

Spawning Distribution: Most spawning takes place in the Kalama River and in tributaries such as Fallert and Arnold Creeks and the Little Kalama River.

Spawning Timing: Spawning generally occurs from mid-October through February.

Genetic Analysis: No genetic analysis has been done on Kalama coho.

Stock Origin

This is a **mixed** stock with **composite** production. Coho are native to the Kalama River. There are also two hatcheries in the sub-basin that produce coho, Fallert Creek Hatchery at RM 4.3 and Kalama Falls Hatchery at RM 10.0. Hatchery coho have been planted in the sub-basin since 1942 from the Fallert Creek Hatchery. Broodstock is collected via hatchery rack returns. Mixing of stocks very likely began to occur with the first releases.

LOWER COLUMBIA – LEWIS COHO

Stock Status

1992 Status	2002 Status
Depressed	**Unknown**

Stock Status Rating Data

There are no adequate abundance trend data for Lewis coho, so their status is **Unknown** in 2002.

Stock Definition

Lewis coho were identified as a stock based on their distinct spawning distribution.

Spawning Distribution: Most spawning takes place in the North Fork Lewis River up to Merwin Dam and in Cedar Creek. Spawning also occurs in NF Lewis tributaries such as Ross Creek, Johnson Creek, Colvin Creek and North and South Forks Chelatchie (Cedar Creek tributary) creeks.

Spawning Timing: Spawning generally occurs from October through February.

Genetic Analysis: Allozyme analysis of Lewis hatchery coho has shown them to be genetically distinct from other Washington coho stocks examined (David Teel, NOAA Fisheries, personal communication).

Stock Origin

This is a **mixed** stock with **composite** production. Despite the blockage of the river by construction of the Merwin Dam in 1931, coho continued to return in good numbers, in part due to the successful hatchery program started in 1930.

LOWER COLUMBIA – EAST FORK LEWIS COHO

Stock Status

1992 Status	2002 Status
Depressed	**Unknown**

Stock Status Rating Data

There are no adequate abundance trend data for East Fork Lewis coho, so stock status is **Unknown** in 2002.

Stock Definition

East Fork Lewis coho were identified as a stock based on their distinct spawning distribution and early run timing. This is a Type-S coho stock, characterized by early run timing and by turning south in the ocean after leaving the Columbia River.

Spawning Distribution: Spawning takes place in the East Fork Lewis River to up to Lucia Falls (RM 21.3) in most years.

Spawning Timing: Spawning generally occurs from October through early November.

Genetic Analysis: No genetic analysis has been done on East Fork Lewis coho.

Stock Origin

This is a **mixed** stock with **composite** production. Early-run coho hatchery programs were developed utilizing Toutle River stock, their derivatives or other native early runs. Early coho used in most of the current programs are thought to be a blend of all of these.

LOWER COLUMBIA – SALMON CREEK COHO

Stock Status

1992 Status	2002 Status
Depressed	**Unknown**

Stock Status Rating Data

There are no adequate abundance trend data for Salmon Creek coho, so their status is **Unknown** in 2002.

Stock Definition

Salmon Creek coho were identified as a stock based on their distinct spawning distribution.

Spawning Distribution: Most spawning takes place in Salmon Creek and in tributaries such as upper Morgan, Rock, Cougar, Suds, and Tenny creeks.

Spawning Timing: Spawning generally occurs from October through February.

Genetic Analysis: No genetic analysis has been done on Salmon Creek coho.

Stock Origin

This is a **mixed** stock with **composite** production. Native populations of coho were present in all lower Columbia River tributaries historically. Under the Columbia River Development program in the 1950s, salmon hatchery construction was expanded on the lower Columbia River tributaries and hatcheries began to trap broodstock in many areas. Over time, broodstock, eggs or juvenile coho were transferred throughout the lower Columbia River stations and also areas above Bonneville Dam. Hatchery off-station planting of juvenile coho was commonplace. Most significant streams have received coho plantings. The result is a widely mixed coho stock.

LOWER COLUMBIA – WASHOUGAL COHO

Stock Status

1992 Status	2002 Status
Depressed	**Unknown**

Stock Status Rating Data

There are no adequate abundance trend data for Washougal coho, so their status is **Unknown** in 2002.

Stock Definition

Mainstem Washougal coho were identified as a stock based on their distinct spawning distribution.

Spawning Distribution: Most spawning takes place in the mainstem Washougal River and in the Little Washougal River below the falls, in Winkler Creek and the West Fork Washougal.

Spawning Timing: Spawning generally occurs from mid-October through February.

Genetic Analysis: No genetic analysis has been done on Mainstem Washougal coho.

Stock Origin

This is a **mixed** stock with **composite** production. The Washougal Hatchery was built in 1958 and is a major producer of coho. Hatchery coho have been planted in the sub-basin at least since 1967. Mixing stocks very likely began to occur with the first releases.

LOWER COLUMBIA – BONNEVILLE TRIBS COHO

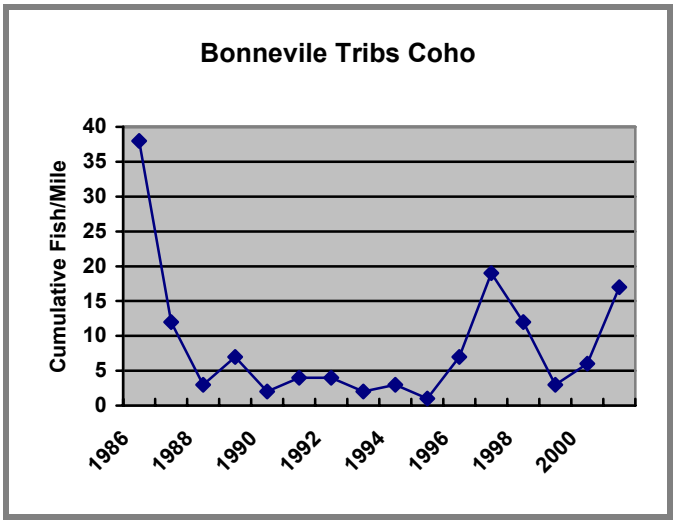
STOCK STATUS

1992 STATUS	2002 STATUS
Depressed	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	CUMULATIVE FISH/MILE
1986	38
1987	12
1988	3
1989	7
1990	2
1991	4
1992	4
1993	2
1994	3
1995	1
1996	7
1997	19
1998	12
1999	3
2000	6
2001	17



Data are cumulative fish per mile index counts from Duncan Creek, Hamilton Creek, Hamilton Spring Channel, Greenleaf Creek and Hardy Creek.

Stock status is rated **Depressed** in 2002 because of **chronically low** cumulative fish/mile values.

STOCK DEFINITION

Bonneville Tribs coho were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Most spawning takes place in Duncan, Woodward, Hardy and Hamilton creeks. Spawning also occurs in tributaries such as Greenleaf and Cedar Creeks.

SPAWNING TIMING: Spawning generally occurs from November through mid-January.

GENETIC ANALYSIS: No genetic analysis has been done on Bonneville Tribs coho.

LOWER COLUMBIA – BONNEVILLE TRIBS COHO

Stock Origin

This is a **mixed** stock with **composite** production. Washougal Hatchery late coho fingerlings were released into Duncan and Greenleaf creeks in 1983. There are no records of hatchery releases into Hardy and Hamilton creeks between 1968 and 1987.

LOWER COLUMBIA – KALAMA SUMMER STEELHEAD

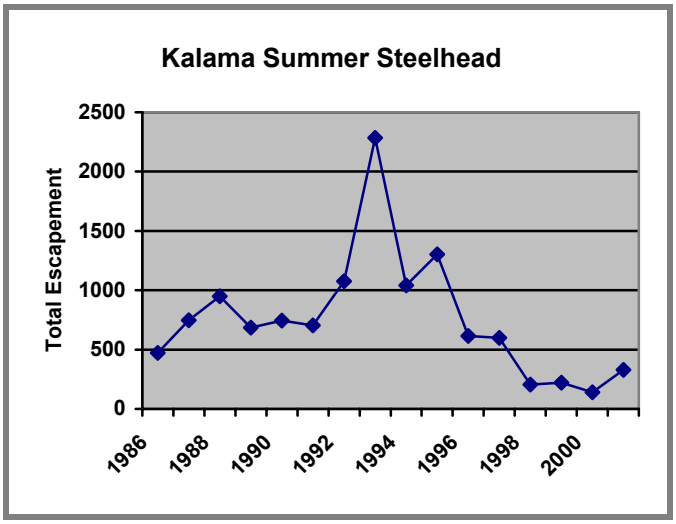
STOCK STATUS

1992 STATUS	2002 STATUS
Depressed	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Excellent

YEAR	TOTAL ESCAPEMENT
1986	473
1987	748
1988	950
1989	684
1990	745
1991	704
1992	1,075
1993	2,283
1994	1,041
1995	1,302
1996	614
1997	598
1998	205
1999	220
2000	140
2001	329



Data are total escapement estimates based on trap counts at lower Kalama Falls (RM 10.5).

Kalama summer steelhead are rated **Depressed** in 2002 based on a **short-term severe decline** in escapement from 1998 through 2001. The escapement goal for this stock is 1,000 adult spawners. Escapements in 1998 through 2001 have been only 14% to 33% of the goal.

STOCK DEFINITION

Kalama summer steelhead were identified as a stock based on their distinct spawning distribution and early run timing.

SPAWNING DISTRIBUTION: Most spawning takes place in the mainstem Kalama above lower Kalama Falls and in Gobar, Elk, and Fossil creeks, which are also located above the falls.

SPAWNING TIMING: Spawning generally occurs from mid-January through April.

LOWER COLUMBIA – KALAMA SUMMER STEELHEAD

GENETIC ANALYSIS: Genetic sampling was conducted in 1994, however the collection (juveniles) may contain both summer and winter steelhead, so comparisons of this collection with other collections are not very informative (Myers et al. 2002).

STOCK ORIGIN

This is a **native** stock with **wild** production.

LOWER COLUMBIA – EAST FORK LEWIS SUMMER STEELHEAD

STOCK STATUS

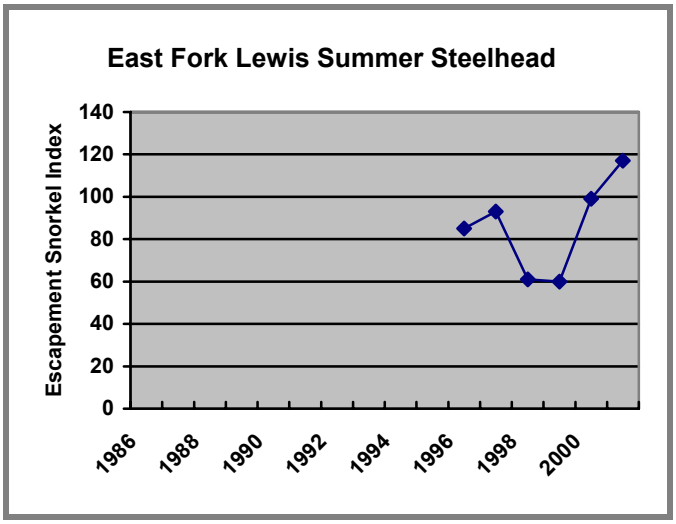
1992 STATUS	2002 STATUS
Unknown	Unknown

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Poor

YEAR	SNORKEL INDEX ESCAPEMENT
1996	85
1997	93
1998	61
1999	60
2000	99
2001	117

Data are total escapement estimates based on index snorkel surveys from the Green Fork (RM 40) downstream to below Daybreak Park (RM 7).



There are no adequate abundance trend data available with which to rate the status of East Fork Lewis summer steelhead, so their status is **Unknown** in 2002. Information about the relationship between the snorkel survey results and a total escapement estimate is necessary to assess the status of this stock. An escapement goal of 814 fish has been established for this stock.

STOCK DEFINITION

East Fork Lewis summer steelhead were identified as a stock based on their distinct spawning distribution and early run timing.

SPAWNING DISTRIBUTION: Spawning takes place in the East Fork Lewis River and its tributaries.

SPAWNING TIMING: Spawning generally occurs from early March through early June.

GENETIC ANALYSIS: Genetic sampling was conducted in 1996, however comparisons of allele frequencies between this stock and other lower Columbia steelhead stocks for determining stock distinctiveness are not very informative (Myers et al. 2002)

LOWER COLUMBIA – EAST FORK LEWIS SUMMER STEELHEAD

Stock Origin

This is a **native** stock with **wild** production.

LOWER COLUMBIA – NORTH FORK LEWIS SUMMER STEELHEAD

Stock Status

1992 Status	2002 Status
Depressed	**Unknown**

Stock Status Rating Data

There are no adequate abundance trend data for North Fork Lewis summer steelhead, so their status is **Unknown** in 2002 but may be Depressed because eighty per cent of the historic habitat of this stock has been lost because of dam construction. No escapement goal has been established for this stock.

Stock Definition

North Fork Lewis summer steelhead were identified as a stock based on their distinct spawning distribution and run timing.

Spawning Distribution: Most spawning takes place in the North Fork Lewis River, Cedar Creek and their tributaries.

Spawning Timing: Spawning generally occurs from early March through early June.

Genetic Analysis: No genetic analysis has been done on North Fork Lewis summer steelhead.

Stock Origin

This is a **native** stock with **wild** production.

LOWER COLUMBIA – WASHOUGAL SUMMER STEELHEAD

This stock combines the Mainstem Washougal and West Fork (North Fork) Washougal summer steelhead stocks in the 1992 SASSI.

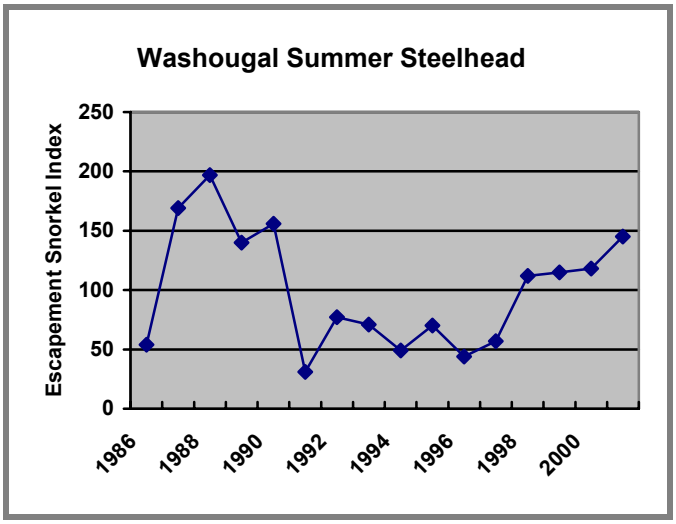
STOCK STATUS

1992 STATUS	2002 STATUS
Unknown	Unknown

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Poor

YEAR	SNORKEL INDEX ESCAPEMENT
1986	54
1987	169
1988	197
1989	140
1990	156
1991	31
1992	77
1993	71
1994	49
1995	70
1996	44
1997	57
1998	112
1999	115
2000	118
2001	145



Data are index escapement estimates based on index snorkel counts in summer steelhead holding pools.

These abundance trend data not adequate for rating stock status, because the relationship between the index estimate and total escapement is undetermined. As a result the stock status is rated **Unknown** in 2002. An escapement goal of 1,210 fish has been established for this stock.

STOCK DEFINITION

Washougal summer steelhead were identified as a stock based on their distinct spawning distribution and early run timing.

SPAWNING DISTRIBUTION: Spawning takes place in the Washougal River and in its forks and tributaries.

SPAWNING TIMING: Spawning generally occurs from early March through early June.

LOWER COLUMBIA – WASHOUGAL SUMMER STEELHEAD

GENETIC ANALYSIS: Genetic sampling was conducted in 1993, however comparisons of allele frequencies between this stock and other lower Columbia steelhead stocks for determining stock distinctiveness are not very informative Myers et al. 2002).

STOCK ORIGIN

This is a **native** stock with **wild** production.

LOWER COLUMBIA – WIND SUMMER STEELHEAD

This stock combines the Mainstem Wind summer steelhead, Panther Creek summer steelhead, and Trout Creek summer steelhead stocks from the 1992 SASSI.

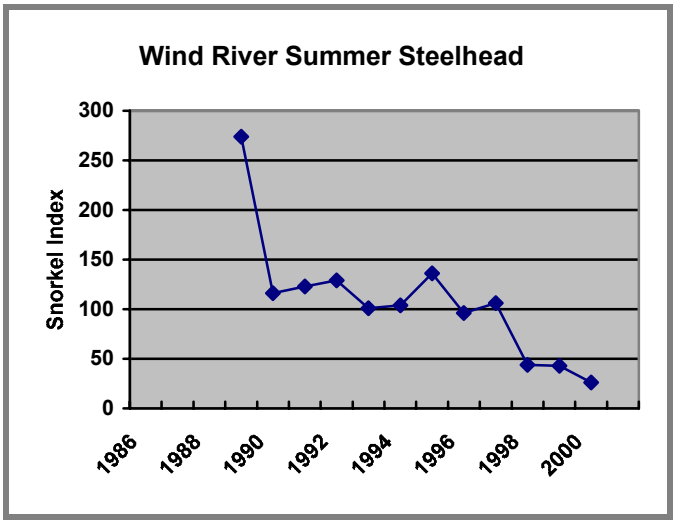
STOCK STATUS

1992 STATUS	2002 STATUS
Depressed	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	SNORKEL INDEX
1989	274
1990	116
1991	123
1992	129
1993	101
1994	104
1995	136
1996	96
1997	106
1998	44
1999	43
2000	26



Data are snorkel index estimates based on a mark-recapture program. Summer steelhead are marked at the Shipherd Falls trap and passed upstream. During snorkel surveys in index areas above the falls, numbers of marked and unmarked fish are counted and index escapement estimates are made.

Stock status is rated **Depressed** in 2002 because of **chronically low** escapements. Currently, the relationship between snorkel survey results and the total escapement of summer steelhead is unknown. An escapement goal of 957 adults has been established for this stock

STOCK DEFINITION

Wind River summer steelhead were identified as a stock based on their distinct spawning distribution and early run timing.

Spawning Distribution: Spawning takes place in the mainstem Wind River and in Panther and Trout creeks.

SPAWNING TIMING: Spawning generally occurs from early March through early June.

GENETIC ANALYSIS: Allozyme analysis of mainstem Wind River and Panther Creek summer steelhead sampled in 1994 clustered them with a number of lower Columbia summer and winter steelhead stocks including Skamania Hatchery summer steelhead. A collection from Trout Creek was part of an outlier

cluster that included SF Nooksack summer steelhead, Washougal steelhead and Cowlitz late winter (native) steelhead (Phelps et al. 1997).

Stock Origin

This is a **native** stock with **wild** production.

LOWER COLUMBIA – WHITE SALMON RIVER SUMMER STEELHEAD

Stock Status

1992 Status	2002 Status
Depressed	**Unknown**

Stock Status Rating Data

There are no adequate abundance trend data for White Salmon summer steelhead. Stock status is **Unknown** in 2002 but may be Depressed because access to 70% of historic habitat of this stock has been lost due to the construction of Condit Dam.

Stock Definition

White Salmon River summer steelhead were identified as a stock based on their distinct spawning distribution and run timing.

Spawning Distribution: Spawning is confined to the lower 3.3 miles of the White Salmon River below Condit Dam.

Spawning Timing: Spawning generally occurs from early March through early June.

Genetic Analysis: Allozyme analysis of White Salmon summer steelhead clustered them with Klickitat steelhead (Phelps et al. 1997).

Stock Origin

This is a stock of **unknown** origin with **wild** production. Summer steelhead are native to the White Salmon River. However, we do not know whether native steelhead have hybridized with hatchery steelhead that were planted or strayed into the river.

LOWER COLUMBIA – GRAYS WINTER STEELHEAD

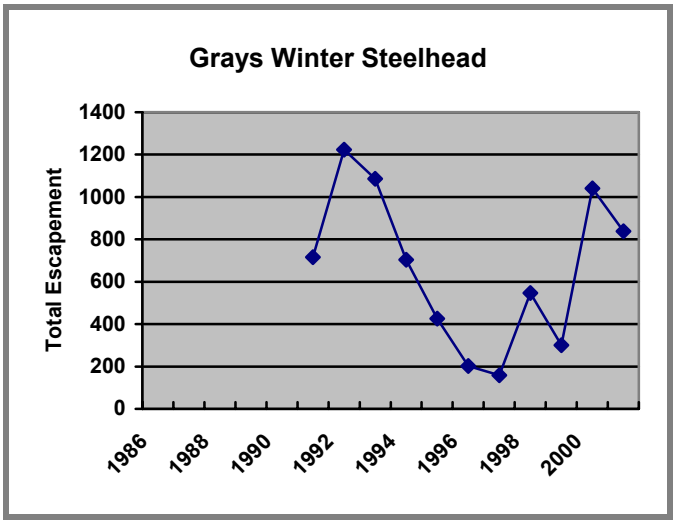
STOCK STATUS

1992 STATUS	2002 STATUS
Depressed	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	TOTAL ESCAPEMENT
1991	716
1992	1,224
1993	1,086
1994	704
1995	426
1996	203
1997	158
1998	546
1999	300
2000	1,040
2001	838



Data are total escapement estimates based on redd counts in index areas in the mainstem Grays from tidewater to the confluence with the East Fork of the Grays (RM 21.7) and in Hull Creek, West Fork Grays, South Fork Grays, and Blaney and Mitchell creeks.

Stock status is rated **Depressed** in 2002 because of **chronically low** wild spawner escapements. An escapement goal of 1,486 fish has been established for this stock.

STOCK DEFINITION

Grays winter steelhead were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Spawning takes place throughout the mainstem Grays River and in the East, West and South forks of the Grays.

SPAWNING TIMING: Spawning generally occurs from March through early June.

GENETIC ANALYSIS: Genetic sampling was conducted in 1994 and 1995, however comparisons of allele frequencies between this stock and other lower Columbia steelhead stocks for determining stock distinctiveness are not very informative (Myers et al. 2002).

LOWER COLUMBIA – GRAYS WINTER STEELHEAD

Stock Origin

This is a **native** stock with **wild** production.

LOWER COLUMBIA – SKAMOKAWA CREEK WINTER STEELHEAD

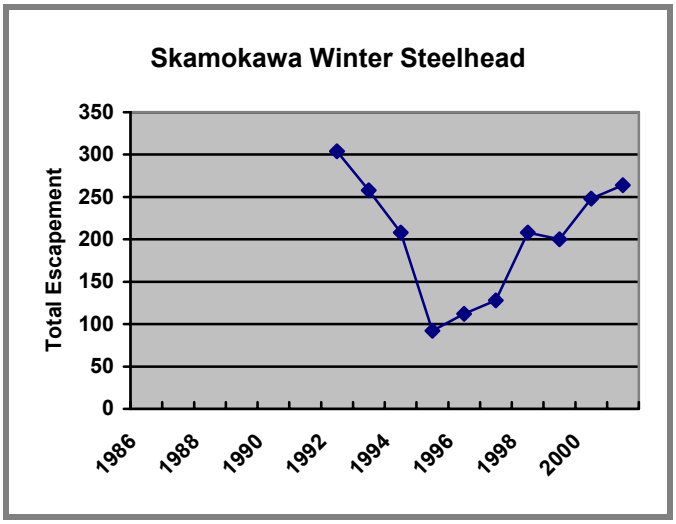
STOCK STATUS

1992 STATUS	2002 STATUS
Unknown	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Fair

YEAR	TOTAL ESCAPEMENT
1992	304
1993	258
1994	208
1995	92
1996	112
1997	128
1998	208
1999	200
2000	248
2001	264



Data are total escapement estimates based on redd counts in index areas in the mainstem Skamokawa Creek from the mouth to the confluence with the Left Fork Skamokawa Creek (RM 4.9) and in Wilson Creek, the Left Fork, Standard and McDonald creeks.

Stock status is rated **Depressed** in 2002 because of **chronically low** escapements. An escapement goal of 227 fish has been established for this stock. Escapements have not met this goal since 1993 except in 2000 and 2001.

STOCK DEFINITION

Skamokawa winter steelhead were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Most spawning takes place in Skamokawa, Wilson, Left Fork, Quartz and McDonald creeks. Spawning also occurs in tributaries such as Bell Canyon, Pollard and Standard creeks.

SPAWNING TIMING: Spawning generally occurs from March through early June.

GENETIC ANALYSIS: Genetic sampling was conducted in 1995, however comparisons of allele frequencies between this stock and other lower Columbia steelhead stocks for determining stock distinctiveness are not very informative (Myers et al. 2002).

LOWER COLUMBIA – SKAMOKAWA WINTER STEELHEAD

Stock Origin

This is a **native** stock with **wild** production.

LOWER COLUMBIA – ELOCHOMAN WINTER STEELHEAD

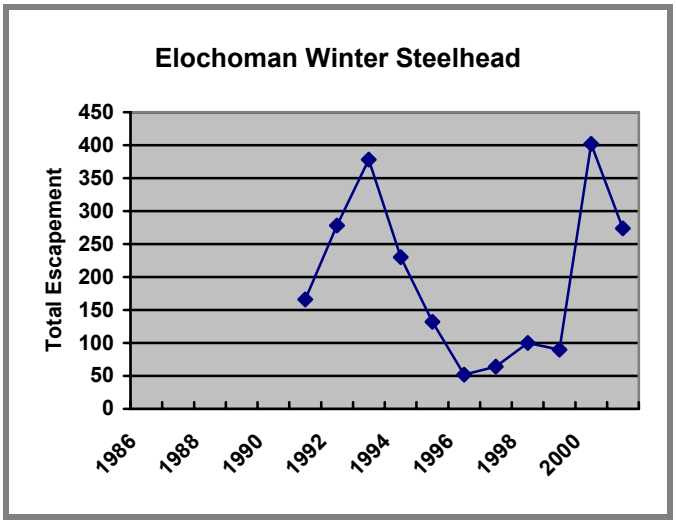
STOCK STATUS

1992 STATUS	2002 STATUS
Depressed	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Fair

YEAR	TOTAL ESCAPEMENT
1991	166
1992	278
1993	378
1994	230
1995	132
1996	52
1997	64
1998	100
1999	90
2000	402
2001	274



Data are total escapement estimates based on redd counts in index areas in the mainstem from the mouth to the Elochoman Hatchery (RM 9.5) and in the two miles above the hatchery, and in the North Fork Elochoman West Fork Elochoman, East Fork Elochoman and Otter Creek.

Stock status is rated **Depressed** in 2002 because of **chronically low** escapements. An escapement goal of 626 fish has been established for this stock. Despite the improvement in 2000, escapements have been low since 1991.

STOCK DEFINITION

Elochoman winter steelhead were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Most spawning takes place in the Elochoman River and tributaries such as Beaver, Duck, Clear, Rock and Otter creeks. Spawning also occurs in the North, East and West forks of the Elochoman.

SPAWNING TIMING: Spawning generally occurs from March through early June.

GENETIC ANALYSIS: Genetic sampling was conducted in 1995, however comparisons of allele frequencies between this stock and other lower Columbia steelhead stocks for determining stock distinctiveness are not very informative (Myers et al. 2002).

LOWER COLUMBIA – ELOCHOMAN WINTER STEELHEAD

Stock Origin

This is a **native** stock with **wild** production.

LOWER COLUMBIA – MILL CREEK WINTER STEELHEAD

Stock Status

1992 Status	2002 Status
Depressed	**Unknown**

Stock Status Rating Data

There are no adequate abundance trend data available for Mill Creek winter steelhead, so their status is **Unknown** in 2002.

Stock Definition

Mill Creek winter steelhead were identified as a stock based on their distinct spawning distribution.

Spawning Distribution: Most spawning takes place in mainstem Mill Creek and the North Fork Mill Creek. Spawning also occurs in some unnamed tributaries.

Spawning Timing: Spawning generally occurs from March to early June.

Genetic Analysis: No genetic analysis has been done on Mill Creek winter steelhead.

Stock Origin

This is a **native** stock with **wild** production.

LOWER COLUMBIA – ABERNATHY CREEK WINTER STEELHEAD

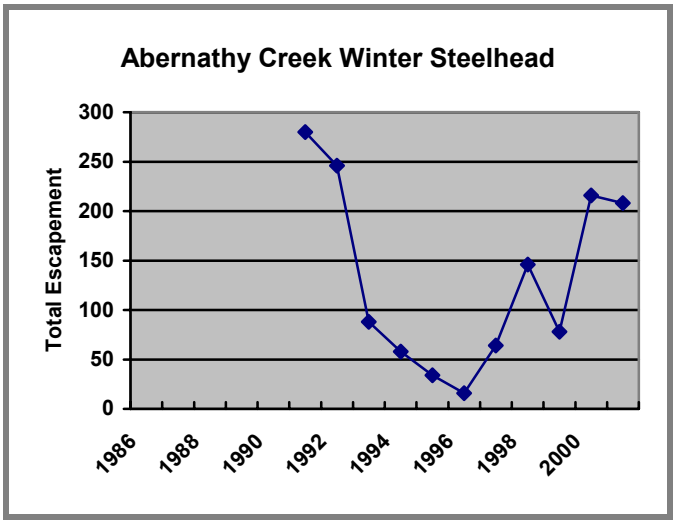
STOCK STATUS

1992 STATUS	2002 STATUS
Depressed	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Fair

YEAR	TOTAL ESCAPEMENT
1991	280
1992	246
1993	88
1994	58
1995	34
1996	16
1997	64
1998	146
1999	78
2000	216
2001	208



Data are total escapement estimates based on redd counts in index areas in the mainstem from the mouth to the confluence with Ordway Creek and in Ordway and Eriek creeks. Pre-1991 data were sport harvest estimates and are not comparable to escapement data.

Stock status is rated **Depressed** in 2002 because of **chronically low** escapements. An escapement goal of 306 fish has been established for this stock. Escapements have been generally low, with an all-time low in 1996 of 16 fish.

STOCK DEFINITION

Abernathy Creek winter steelhead were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Most spawning takes place in Abernathy Creek and in tributaries such as Slide and Cameron creeks.

SPAWNING TIMING: Spawning generally occurs from March through early June.

GENETIC ANALYSIS: No genetic analysis has been done on Abernathy winter steelhead.

STOCK ORIGIN

This is a **native** stock with **wild** production.

LOWER COLUMBIA – GERMANY CREEK WINTER STEELHEAD

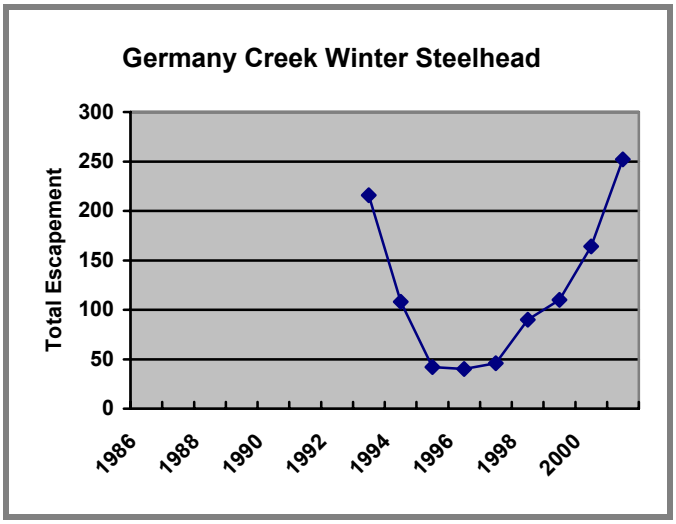
STOCK STATUS

1992 STATUS	2002 STATUS
Depressed	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Fair

YEAR	TOTAL ESCAPEMENT
1993	216
1994	108
1995	42
1996	40
1997	46
1998	90
1999	110
2000	164
2001	252



Data are total escapement estimates based on redd counts in index areas in Germany Creek

Stock status is rated **Depressed** in 2002 because of **chronically low** escapements. An escapement goal of 202 fish has been established for this stock. It has been met only twice, in 1993 and 2001.

STOCK DEFINITION

Germany Creek winter steelhead were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Spawning takes place in Germany Creek and in tributaries such as Loper and John creeks.

SPAWNING TIMING: Spawning occurs from March through early June.

GENETIC ANALYSIS: No genetic analysis has been done on Germany winter steelhead.

STOCK ORIGIN

This is a **native** stock with **wild** production. Germany Creek has been planted with hatchery winter steelhead since 1961. Stock from Elochoman River, Chambers Creek and Cowlitz River have been utilized for these plants. We consider that a native stock still exists because the non-native fish spawn much earlier than the native stock.

LOWER COLUMBIA – COWLITZ WINTER STEELHEAD

Stock Status

1992 Status	2002 Status
Depressed	**Unknown**

Stock Status Rating Data

There are no adequate abundance trend data available for Cowlitz winter steelhead, so their status is **Unknown** in 2002 but may be Depressed because access to 80% of the historic habitat of this stock has been lost due to dam construction.

Stock Definition

Cowlitz winter steelhead were identified as a stock based on their distinct spawning distribution.

Spawning Distribution: Most spawning downstream of Mayfield Dam takes place in the lower mainstem Cowlitz River and in Ostrander and Salmon creeks. Spawning also takes place in Olequa, Stillwater, Whittle, Arkansas, and Delameter creeks. Cowlitz winter steelhead are also trucked above the three dams on the Cowlitz River and released into the Tilton River and Lake Scanewa, the uppermost reservoir. Spawning occurs in the Tilton River, the Cispus River and its tributaries, and the upper Cowlitz and its tributaries.

Spawning Timing: Spawning generally occurs from March to early June.

Genetic Analysis: No genetic analysis has been done on naturally spawning Cowlitz winter steelhead. Cowlitz Hatchery late winter steelhead, derived from native broodstock, were sampled in 1996, however comparisons of allele frequencies between this stock and other lower Columbia steelhead stocks for determining stock distinctiveness are not very informative (Myers et al. 2002).

Stock Origin

This is a **mixed** stock with **wild** production.

LOWER COLUMBIA – COWEEMAN WINTER STEELHEAD

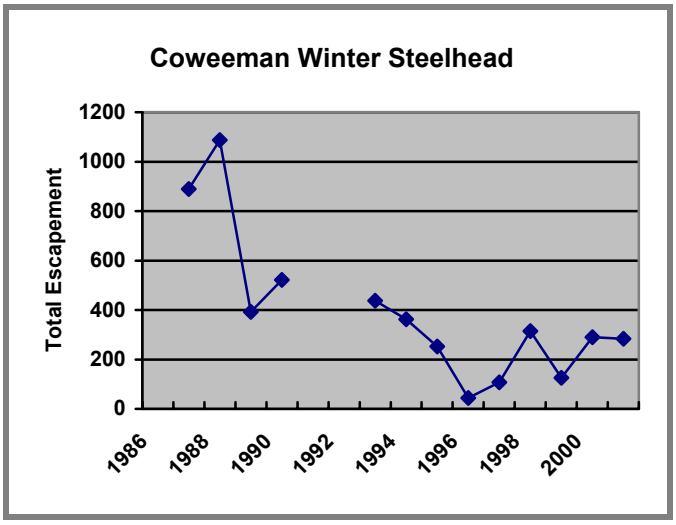
STOCK STATUS

1992 STATUS	2002 STATUS
Depressed	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Fair

YEAR	TOTAL ESCAPEMENT
1987	889
1988	1,088
1989	392
1990	522
1991	No data
1992	No data
1993	438
1994	362
1995	252
1996	44
1997	108
1998	314
1999	126
2000	290
2001	284



Data are total escapement estimates based on redd counts in index areas in the mainstem from the mouth to the confluence with Mulholland Creek (RM 18.4) and in Mulholland, Baird and Goble creeks. Additional surveys are carried out in Mulholland, Baird and Goble creeks during peak spawning.

Stock status is rated **Depressed** in 2002 because of **chronically low** escapements. An escapement goal of 1,064 fish has been established for this stock. This stock has had consistently low escapement estimates since 1989 with an all-time low escapement of 44 fish in 1996.

STOCK DEFINITION

Coweeman winter steelhead were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Most spawning takes place in the mainstem Coweeman River and in tributaries such as Mulholland and Gobble creeks.

SPAWNING TIMING: Spawning generally occurs from March through early June.

GENETIC ANALYSIS: No genetic analysis has been done on Coweeman winter steelhead.

LOWER COLUMBIA – COWEEMAN WINTER STEELHEAD

Stock Origin

This is a **native** stock with **wild** production. The Coweeman River has been planted with hatchery winter steelhead since 1957. Most of the releases were Chambers Creek Hatchery winter steelhead stock, whose spawning peak occurs almost three months prior to the spawning peak of the native stock. We do not believe that significant hybridization has occurred between the Chambers Creek stock and the native stock.

LOWER COLUMBIA – MAINSTEM/NORTH FORK TOUTLE WINTER STEELHEAD

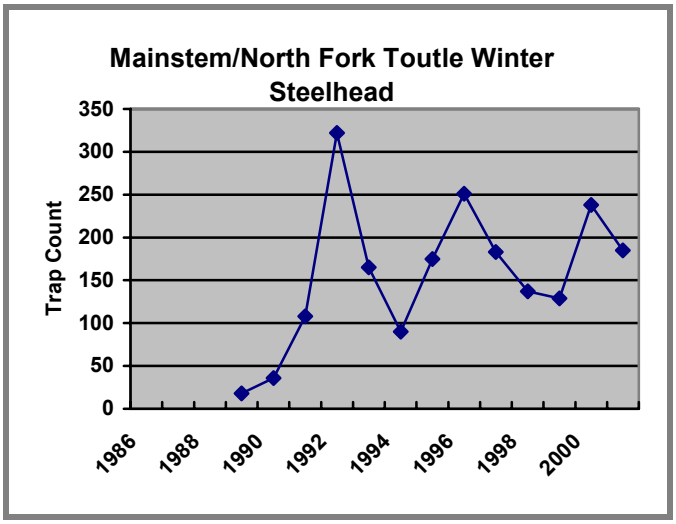
STOCK STATUS

1992 STATUS	2002 STATUS
Depressed	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	TRAP COUNT
1989	18
1990	36
1991	108
1992	322
1993	165
1994	90
1995	175
1996	251
1997	183
1998	137
1999	129
2000	238
2001	185



Data are trap counts from the North Toutle Fish Collection Facility. Redd surveys are also conducted in Wyand and Nineteen Mile creeks.

Stock status is rated **Depressed** in 2002 because of **chronically low** escapements. No escapement goal has been established for this stock. Escapements have been consistently low as a result of habitat degradation caused by the Mt. St. Helens eruption in 1980.

STOCK DEFINITION

Mainstem/North Fork Toutle winter steelhead were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Most spawning takes place in the mainstem Toutle and North Fork Toutle rivers. Spawning also occurs in tributaries such as Alder and Deer creeks.

SPAWNING TIMING: Spawning generally occurs from March through early June.

GENETIC ANALYSIS: No genetic analysis has been done on Mainstem/North Fork Toutle winter steelhead.

LOWER COLUMBIA – MAINSTEM/NORTH FORK TOUTLE WINTER STEELHEAD

Stock Origin

This is a **native** stock with **wild** production.

LOWER COLUMBIA – GREEN (TOUTLE) WINTER STEELHEAD

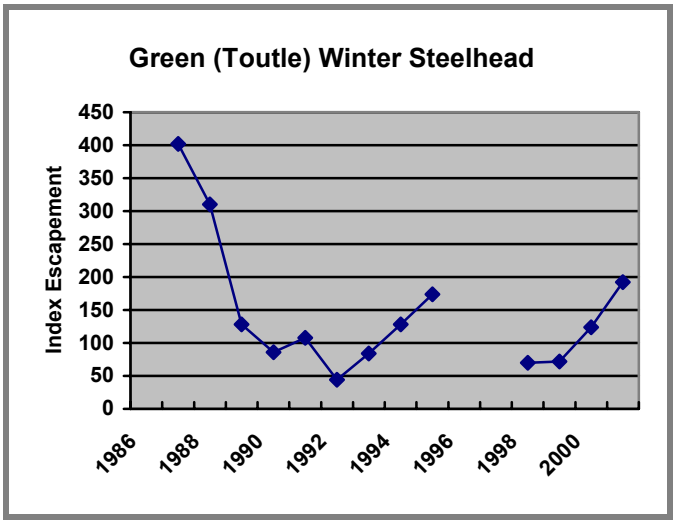
STOCK STATUS

1992 STATUS	2002 STATUS
Depressed	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Fair

YEAR	INDEX ESCAPEMENT
1987	402
1988	310
1989	128
1990	86
1991	108
1992	44
1993	84
1994	128
1995	174
1996	No data
1997	No data
1998	70
1999	72
2000	124
2001	192



Data are index escapement estimates based on redd counts in index areas on the mainstem Green River and in Elk, Cascade, and Devil's creeks.

Stock status is rated **Depressed** in 2002 because of **chronically low** escapements. No escapement goal has been established for this stock.

STOCK DEFINITION

Green (Toutle) winter steelhead were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Most spawning takes place in the Green River and in tributaries such as Devil, Elk, and Shultz creeks.

SPAWNING TIMING: Spawning generally occurs from March through early June.

GENETIC ANALYSIS: Genetic sampling was conducted in 1995, however comparisons of allele frequencies between this stock and other lower Columbia steelhead stocks for determining stock distinctiveness are not very informative (Myers et al. 2002).

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LOWER COLUMBIA – GREEN (TOUTLE) WINTER STEELHEAD

Stock Origin

This is a **native** stock with **wild** production. Aside from several small fry plants after the 1980 eruption of Mount St. Helens, hatchery winter steelhead have not been stocked into the South Fork Toutle River.

LOWER COLUMBIA – SOUTH FORK TOUTLE WINTER STEELHEAD

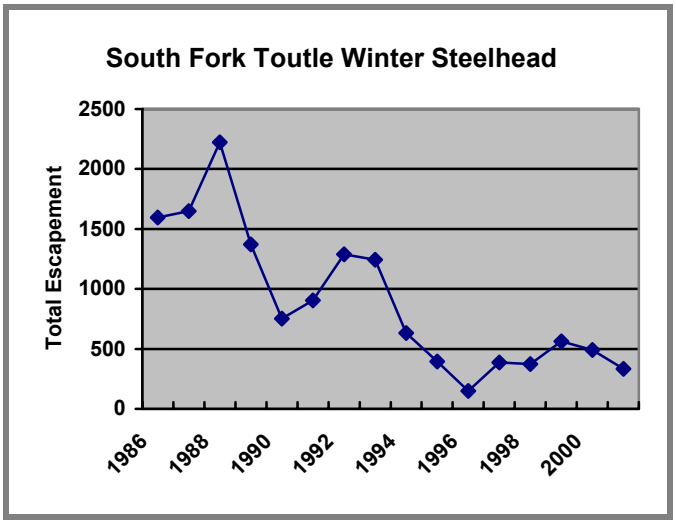
STOCK STATUS

1992 STATUS	2002 STATUS
Healthy	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Good

YEAR	TOTAL ESCAPEMENT
1986	1,595
1987	1,650
1988	2,222
1989	1,371
1990	752
1991	904
1992	1,290
1993	1,242
1994	632
1995	396
1996	150
1997	388
1998	374
1999	562
2000	490
2001	334



Data are total escapement estimates based on redd counts in index areas in the mainstem South Fork Toutle from the mouth to Goat Creek and in Studebaker, Johnson, Harrington and "Loch" creeks.

Stock status is rated **Depressed** in 2002 because of **chronically low** escapements. An escapement goal of 1,058 fish has been established for this stock. Escapements have been low from 1994 to the present.

STOCK DEFINITION

South Fork Toutle winter steelhead were identified as a stock based on their distinct spawning distribution.

SPAWNING DISTRIBUTION: Most spawning takes place in the South Fork Toutle River and in tributaries such as Studebaker, Johnson, and Bear creeks.

SPAWNING TIMING: Spawning generally occurs from March through early June.

GENETIC ANALYSIS: Genetic sampling was conducted in 1996, however comparisons of allele frequencies between this stock and other lower Columbia steelhead stocks for determining stock distinctiveness are not very informative (Myers et al. 2002).

LOWER COLUMBIA – SOUTH FORK TOUTLE WINTER STEELHEAD

Stock Origin

This is a **native** stock with **wild** production. Aside from several small fry plants after the 1980 eruption of Mount St. Helens, hatchery winter steelhead have not been stocked into the South Fork Toutle River.

LOWER COLUMBIA – KALAMA WINTER STEELHEAD

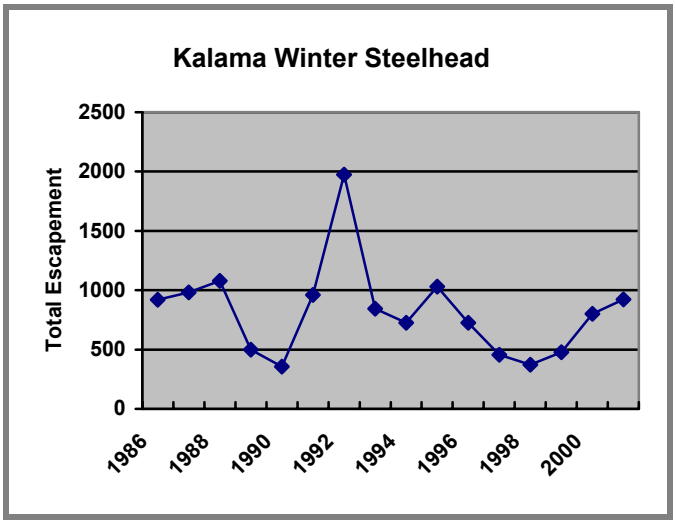
Stock Status

1992 Status	2002 Status
Healthy	Healthy

Stock Status Rating Data

Usefulness for Rating Stock Status: Good

Year	Total Escapement
1986	1,081
1987	1,155
1988	1,269
1989	588
1990	419
1991	1,128
1992	2,322
1993	992
1994	853
1995	1,212
1996	853
1997	537
1998	438
1999	562
2000	941
2001	1,085



Data are total escapement estimates based on counts at the adult trap at lower Kalama Falls (RM 10.5) expanded to account for fish that spawn below the trap.

Stock status is rated **Healthy** in 2002 because this stock has maintained relatively stable escapement estimates within the normal range of variation. An escapement goal of 1,000 fish has been established for this stock.

Stock Definition

Kalama winter steelhead were identified as a stock based on their distinct spawning distribution and later run timing.

Spawning Distribution: Most spawning takes place in the mainstem Kalama River and in tributaries such as Gobar, Elk, and Fossil creeks.

Spawning Timing: Spawning generally occurs from early January through early June.

LOWER COLUMBIA – KALAMA WINTER STEELHEAD

GENETIC ANALYSIS: Genetic sampling was conducted in 1994, however the collection (juveniles) may contain both summer and winter steelhead, so comparisons of this collection with other collections are not very informative (Myers et al. 2002).

STOCK ORIGIN

This is a **native** stock with **wild** production.

LOWER COLUMBIA – MAINSTEM/NORTH FORK LEWIS WINTER STEELHEAD

Stock Status

1992 Status	2002 Status
Depressed	**Unknown**

Stock Status Rating Data

There are no adequate abundance trend data for Mainstem/North Fork Lewis winter steelhead, so their status is **Unknown** in 2002. Trap counts at the Grist Mill on lower Cedar Creek and redd counts in the mainstem Cedar Creek above the trap have recently been initiated. An escapement goal of 698 fish has been established for this stock. Status may be Depressed because access to 80% of the historic habitat has been lost due to dam construction.

Stock Definition

Mainstem/North Fork Lewis winter steelhead were identified as a stock based on their distinct spawning distribution and run timing.

Spawning Distribution: Spawning takes place the mainstem Lewis and North Fork Lewis rivers and their tributaries.

Spawning Timing: Spawning generally occurs from early March through early June.

Genetic Analysis: Genetic sampling was conducted in 1996, however comparisons of allele frequencies between this stock and other lower Columbia steelhead stocks for determining stock distinctiveness are not very informative (Myers et al. 2002).

Stock Origin

This is a **native** stock with **wild** production.

LOWER COLUMBIA – EAST FORK LEWIS WINTER STEELHEAD

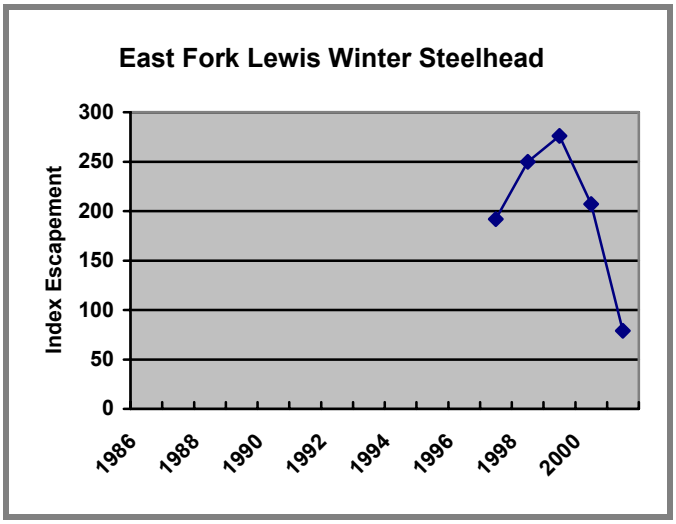
STOCK STATUS

1992 STATUS	2002 STATUS
Depressed	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Fair

YEAR	INDEX ESCAPEMENT
1997	192
1998	250
1999	276
2000	207
2001	79



Data are escapement index estimates based on redd counts in index areas from the mouth of the East Fork Lewis to upper Rock Creek. Prior to flooding in early 1996, additional areas were surveyed but are no longer accessible. The 2001 counts are considered minimum counts because no foot surveys were conducted, only aerial surveys.

Stock status is rated **Depressed** in 2002 because of **chronically low** escapements. A new escapement index was instituted in 1997 and its relationship to the previous escapement index is currently unknown. The escapement index that was used through 1995 showed a trend of chronically low escapements in the East Fork Lewis, and there are no indications that the status of the stock has improved in recent years.

STOCK DEFINITION

East Fork Lewis River winter steelhead were identified as a stock based on their distinct spawning distribution and later run timing.

SPAWNING DISTRIBUTION: Spawning takes place in the East Fork Lewis River and its tributaries.

SPAWNING TIMING: Spawning generally occurs from early March to early June.

GENETIC ANALYSIS: Genetic sampling was conducted in 1996, however comparisons of allele frequencies between this stock and other lower Columbia steelhead stocks for determining stock distinctiveness are not very informative (Myers et al. 2002).

STOCK ORIGIN

This is a **native** stock with **wild** production.

LOWER COLUMBIA – SALMON CREEK WINTER STEELHEAD

Stock Status

1992 Status	2002 Status
Depressed	**Unknown**

Stock Status Rating Data

There are no adequate abundance trend data available for Salmon Creek winter steelhead, so their status is **Unknown** in 2002. An escapement goal of 400 fish has been established for this stock.

Stock Definition

Salmon Creek winter steelhead were identified as a stock based on their distinct spawning distribution.

Spawning Distribution: Spawning takes place in Salmon Creek (Clark County) and tributaries.

Spawning Timing: Spawning generally occurs from early March through early June.

Genetic Analysis: No genetic analysis has been done on Salmon Creek winter steelhead.

Stock Origin

This is a **native** stock with **wild** production.

LOWER COLUMBIA – WASHOUGAL WINTER STEELHEAD

This stock combines the Mainstem Washougal winter steelhead and West Fork (North Fork) winter steelhead stocks in the 1992 SASSI.

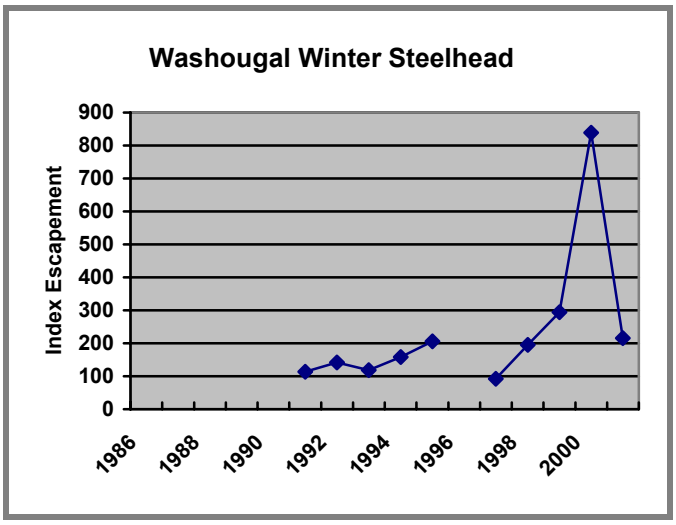
STOCK STATUS

1992 STATUS	2002 STATUS
Unknown	Depressed

STOCK STATUS RATING DATA

USEFULNESS FOR RATING STOCK STATUS: Fair

YEAR	INDEX ESCAPEMENT
1991	114
1992	142
1993	118
1994	158
1995	206
1996	No data
1997	92
1998	195
1999	294
2000	839
2001	216



Data are escapement index estimates from redd counts from the mouth to Dougan Falls (RM 21.6). The 2001 counts are minimal counts; no foot surveys were conducted, only aerial surveys.

Stock status is rated **Depressed** in 2002 because of **chronically low** escapements. Despite the improved escapement in 2000, escapements have been consistently low over the last decade. An escapement goal of 841 adults has been established for this stock. This value is equivalent to 520 adults for the index. That escapement has been met only once since 1991.

STOCK DEFINITION

Washougal winter steelhead were identified as a stock based on their distinct spawning distribution and later run timing.

SPAWNING DISTRIBUTION: Spawning takes place in the mainstem Washougal River, its forks and tributaries.

SPAWNING TIMING: Spawning generally occurs from early March through early June.

GENETIC ANALYSIS: No genetic analysis has been done on Washougal winter steelhead.

LOWER COLUMBIA – WASHOUGAL WINTER STEELHEAD

Stock Origin

This is a **native** stock with **wild** production.

LOWER COLUMBIA – HAMILTON CREEK WINTER STEELHEAD

Stock Status

1992 Status	2002 Status
Unknown	**Unknown**

Stock Status Rating Data

There are no adequate abundance trend data available for Hamilton Creek winter steelhead, so their status is **Unknown** in 2002. No escapement goal has been established for this stock. We believe that historically this stock has been composed of a small number of adult steelhead.

Stock Definition

Hamilton Creek winter steelhead were identified as a stock based on their distinct spawning distribution.

Spawning Distribution: Spawning takes place in Hamilton Creek and its tributaries.

Spawning Timing: Spawning generally occurs from early March through early June.

Genetic Analysis: No genetic analysis has been done on Hamilton Creek winter steelhead.

Stock Origin

This is a **native** stock with **wild** production.

LOWER COLUMBIA – WIND WINTER STEELHEAD

Stock Status

1992 Status	2002 Status
Unknown	**Unknown**

Stock Status Rating Data

There are no adequate abundance trend data for Wind River winter steelhead, so their status is **Unknown** in 2002.

Stock Definition

Wind River winter steelhead were identified as a stock based on their distinct spawning distribution and run timing.

Spawning Distribution: Spawning takes place in the mainstem Wind River and tributaries, including Trout Creek.

Spawning Timing: Spawning generally occurs from early March through early June.

Genetic Analysis: No genetic analysis has been done on Wind River winter steelhead.

Stock Origin

This is a **native** stock with **wild** production.

LOWER COLUMBIA – WHITE SALMON WINTER STEELHEAD

Stock Status

1992 Status	2002 Status
Depressed	**Unknown**

Stock Status Rating Data

There are no adequate abundance trend data for White Salmon winter steelhead. Stock status is **Unknown** in 2002 but may be Depressed because access to 70% of historic habitat of this stock has been lost due to the construction of Condit Dam.

Stock Definition

White Salmon River winter steelhead were identified as a stock based on their distinct spawning distribution and run timing.

Spawning Distribution: Spawning is confined to the lower 3.3 miles of White Salmon River below Condit Dam.

Spawning Timing: Spawning occurs from early March through early June.

Genetic Analysis: No genetic analysis has been done on White Salmon River winter steelhead.

Stock Origin

This may be a **native** stock with **wild** production. Winter steelhead are native to the White Salmon River. However, we do not know whether native steelhead have hybridized with hatchery steelhead that were planted or strayed into the river.